SOAP

SANITARY CHEMICALS

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Photo Pan-Amer. Airways System

THE MODERN DAY ANSWER

A FLYING boat that leaps from continent to continent is today's answer to the problem existing in international travel and transport. And using the full facilities of Ungerer & Co. is the modern day answer to the enormity of odor problems confronting the soapmaker.

Source of supply, quality variation, paucity of raw materials, formulae problems and price—the modern day answer to these odor problems is being supplied by the resources and the resourcefulness of the Ungerer organization.

For new ideas in this new year call upon

UNGERER & CO.
13-15 W. 20th St., N. Y.

January 1941

Neroli

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SYNTHETIC

by Chuit, Naef & Cie

Among the more prominent natural oils of French origin for which a severe shortage exists in this country is—NEROLI. A complete lack of stocks is imminent!

Why not investigate NEROLI SYNTHETIC NAEF?

Our Neroli Synthetic possesses a delightful and smooth character, equaling the natural oil in these respects and actually exceeding the yield of the latter by about 15 percent.

$47.00 PER POUND

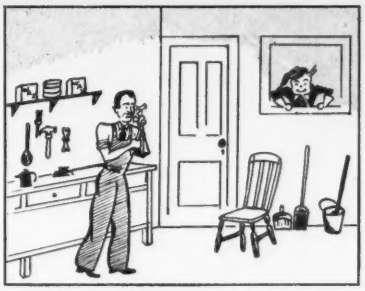
Firmenich & Co., Inc.

135 FIFTH AVE., NEW YORK

CHICAGO OFFICE: 844 NORTH RUSH ST.

Adventures of FULDY

"HOLY GOSH! IT'S ABIGAIL SNAIL, the principal . . . and she wasn't practicing the conga on that slippery wax floor, either! Well, 'wax-i-dents' will happen. But if I know old frosty-face, somebody's gonna catch it!"



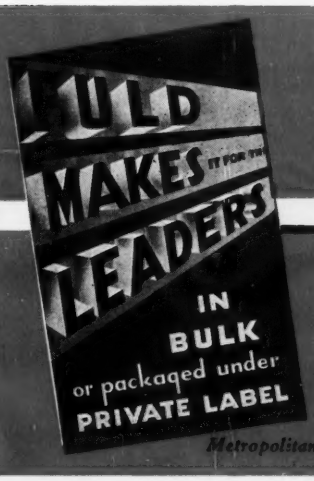
"OH-OH! IT'S HERE ALREADY! Abby lit into the janitor . . . and he's bellowing via Bell at the jobber who sold him the lax wax. Boy, is he boiling! You sort of can't blame the poor guy when it almost cost him his job."

"NOW WE'VE GOT AN UGLY MESS . . . and I don't mean Abigail! What's our jobber going to do? This isn't the first complaint he's had . . . yet the manufacturer swore on a stack of Soap magazines the wax was slip proof."

"WELL, IF HE CAN'T HELP HIMSELF this little trouble-shooter can. Back I scoot to FULD BROS., make my way to the 'lab.'—and the research specialist hands me a can of Fuld's SlypNOTic Wax. Brother, this is it!"

THERE ISN'T ANYTHING WRONG with this jobber that a good wax can't cure. Just look at him glow when he finds Fuld-made Waxes combine slip resistance with famous self-lustre, water resistance and instant drying."

"THAT'S ME ON THE JOBBER'S shoulders. And is everybody happy! Now Abby's sure of her footing, the janitor's sure of his job, the jobber's sure of the finest wax made. And I'm sure tickled pink!"



DEODORANT BLOCKS
LIQUID DEODORANTS
LIQUID CLEANERS
LIQUID SOAPS
OIL SOAPS
INSECTICIDES

DISINFECTANTS
SELF POLISHING WAXES
PASTE WAXES
POWDERED WAXES
FLOOR SEALS
FLOOR TREATMENTS

METAL POLISHES
FURNITURE POLISHES
PLUMBING SPECIALTIES
SPECIAL CLEANERS
SOAP DISPENSERS
DEODORANT BLOCK HOLDERS

Selling Jobbers ONLY!

FULD BROS.

702-710 S. WOLFE STREET, BALTIMORE, MD.

Sales Offices: SEATTLE • KANSAS CITY • SAN FRANCISCO • BOSTON

Metropolitan N. Y. Office: 127 TROUTMAN ST., BROOKLYN, N. Y. *Telephone:* EVergreen 8-2490

"WHAT YOU DON'T SEE .. COUNTS TOO"

IT'S easy enough to make a picture that shows good looking, stoutly built, properly designed containers; for Crown's customer list is a cross section of some of the most representative firms in American Business.

But no photograph can give you a complete picture of the behind-the-scenes activities that have contributed so largely to Crown Can's rapid growth.

Quality control at Crown Can is based on a firm foundation of the most modern can making machinery, operating under the supervision of a personnel in which each man is a qualified expert in his particular field.

On the service side, the Company has built a reputation for speed and dependability that has been no small factor in bringing Crown Can to third place in four years.

CROWN CAN COMPANY, PHILADELPHIA, PA.

Division of Crown Cork and Seal Company

BALTIMORE ST. LOUIS HOUSTON MADISON ORLANDO
FORT WAYNE NEBRASKA CITY

CROWN CAN

INDEPENDENT AND HELPFUL

Volume XVII Number 1

SOAP and SANITARY CHEMICALS

Reg. U. S. Pat. Office

JANUARY
1941

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MEMBER AUDIT BUREAU OF CIRCULATIONS

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MAC NAIR-DORLAND COMPANY, INC.
254 WEST 31st STREET NEW YORK, N. Y.

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Needless TO POINT OUT

UNSETTLED world conditions mean a scarcity of natural products. BUT the products of American aromatics factories have satisfactorily replaced them. Your attention is particularly called to these artificial essential oils:

OIL of Lavender Artificial
OIL of Bergamot Artificial
OIL of Neroli Artificial
OIL of Geranium Artificial

The following raw materials of Domestic availability are outstanding for their proven popularity in the Soap and Perfume industry:

CYCLAMAL — CITRONAL
FLORANOL — ROSEFOLIA

100% Pure—Soap fast—Free from irritation—Will not discolor.

Our line of pure Domestic aromatic chemicals includes:

ALPHA AMYL CINNAMIC ALDEHYDE
IONONE COMPLETE
PARA CRESOL ETHYL ETHER
PARA CRESOL METHYL ETHER
PHENYL ETHYL ALCOHOL

Send for complete list.

Our domestic industry is equipped to take care of practically every perfume problem confronting the manufacturer of soap, perfume or cosmetic.

Requests for samples on your firm's letterhead will be promptly answered.

Aromatics Division

GENERAL DRUG COMPANY

644 PACIFIC STREET, BROOKLYN, N. Y. — 9 S. CLINTON ST., CHICAGO
TRANSPORTATION BLDG., LOS ANGELES, CAL. — 1019 ELLIOTT ST., W., WINDSOR, ONT.

JOBBERS

IF YOUR WAX TRADE DEMANDS LESS SLIP AND HIGHER GLOSS SELL THEM SUPER-WAX

THE WAX THAT REPEATS LONG AFTER THE SALES TALK IS FORGOTTEN

WAX SALESMEN HAVE LONG WANTED A PREMIUM QUALITY WAX TO SELL AT A POPULAR PRICE . . . .

HERE IT IS ➡ ➡

A Better Wax For Every Type of Floor . . . A Better Buy For Every Wax Buyer and there's more profit to you on every sale.

SPECTACULAR SUPER-WAX DEMONSTRATION

Jobbers write that by laying down SUPER-WAX on buyer's floor next to leading competitive waxes, SUPER-WAX wins out on *higher gloss* and *less slip*—a simple but spectacular demonstration.

IT'S A HYSAN QUALITY PRODUCT

SUPER-WAX outsells costliest waxes on quality alone. The wax buyer can observe the *higher gloss* and *less slip* right on his own floor. SUPER-WAX wins bigger, *steadier* repeat sales because its higher gloss holds up after dozens of scrubbings. During heavy weather traffic, rush hours, conventions—in crowded corridors, waiting rooms, street level floors—next to open doors, under constant pivot of heel and toe . . . SUPER-WAX stays glossy, foot safe and smear repellent between applications.

That's what your trade wants. They buy SUPER-WAX because they can see with their own eyes that it does more than other self-polishing waxes that cost more and do less. And that's what makes it so tough for any one to pry a SUPER-WAX buyer away from HYSAN jobbers.

They tell us, these jobbers, that SUPER-WAX is the pace setter that sparks their entire floor treatment line. Our guess is that SUPER-WAX is exactly the NEW self-reselling *leader* you and your salesmen are on the lookout for. Send for 5 gallon trial pail or mail coupon.

YES, SUPER-WAX is made from No. 1 YELLOW CARNAUBA

Fact is, we use the *prime* of No. 1 Yellow Carnauba—world's Costliest wax.

Check these features:

HIGHER GLOSS

HYSAN'S New QUICK CHILL process disperses wax into smaller facets which multiply lustre.

LESS SLIP

"Free" increase in lustre provides a reserve to build up non-slip—formerly sacrificed when high gloss was wanted.

SCRUB-PROOF

SUPER-WAX holds peak lustre after dozens of scrubbings.

LESS SMEAR

SUPER-WAX is proof against "stick and smear." It won't milk under heavy weather traffic.

Never before have all these factors been completely balanced in one and the same wax—yet SUPER-WAX is priced like ordinary self-polishing waxes.

AVAILABLE IN ALL SIZE CONTAINERS

ATTRACTIVE PRIVATE LABELS

SUGGESTION TO JOBBERS

SATISFIED WITH PRESENT LINE OF WAXES

Chances are SUPER-WAX will perform as spectacularly alongside your present favorite wax as it does against competitive waxes. If so, you want SUPER-WAX. Sample on request.

CLEANERS • DISINFECTANTS • SOAPS • DEODORANTS • DEODORANT BLOCKS • INSECTICIDES • POLISHES • WAXES • LIQUID SOAP DISPENSERS

HYSAN — SHIPS IT FASTER

HYSAN

MANUFACTURING CHEMISTS

PROTECT YOUR LABEL WITH HYSAN QUALITY

Hysan Products Company
2560 Armitage Ave., Chicago
Kindly send us sample of SUPER-WAX and more information.

Firm .....
Street .....
City ..... By .....

S-1-41

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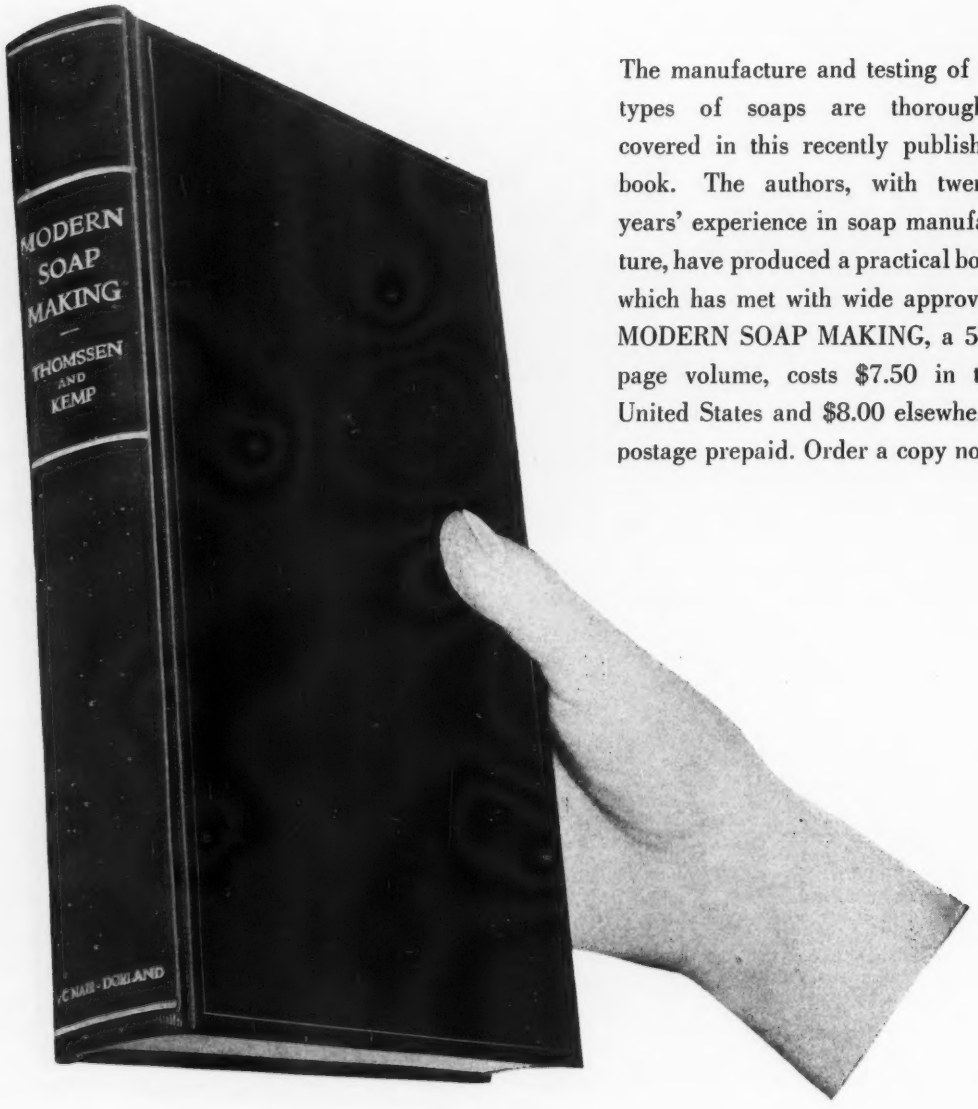
HYSAN PRODUCTS COMPANY · 2560 ARMITAGE AVENUE · CHICAGO, ILL.

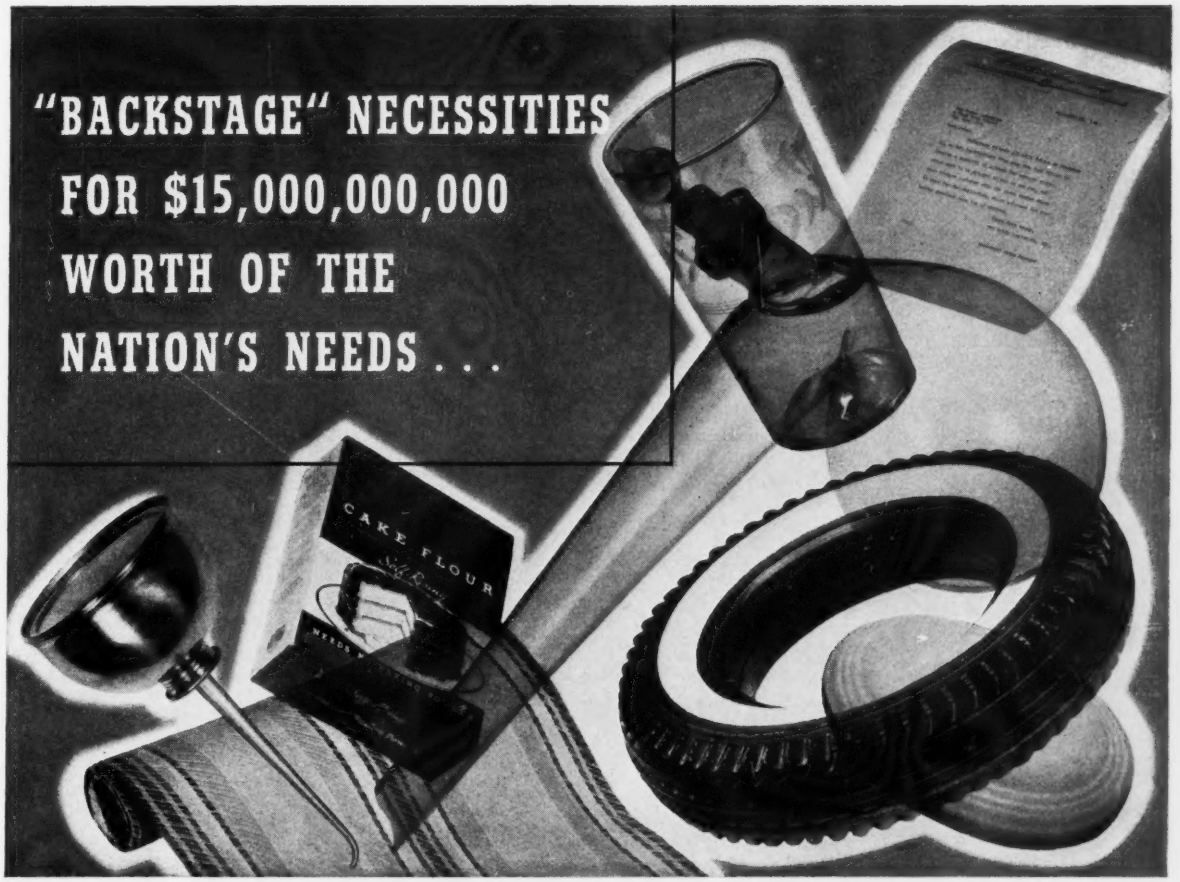
Every soap manufacturer needs a copy of this book!



The manufacture and testing of all types of soaps are thoroughly covered in this recently published book. The authors, with twenty years' experience in soap manufacture, have produced a practical book which has met with wide approval. MODERN SOAP MAKING, a 540 page volume, costs $7.50 in the United States and $8.00 elsewhere, postage prepaid. Order a copy now.

MAC NAIR-DORLAND CO., *Publishers*

254 WEST 31st STREET NEW YORK CITY



COLUMBIA alkalies and related products are "backstage" materials—and most important ones. They help keep nearly 3,000,000 people at work, making over fifteen billion dollars' worth of glass, soap, paper, rubber, textiles, dyestuffs and other chemicals. Without the homely products such as ours, many, many things the nation wears and uses for work and play couldn't be available so plentifully. Some couldn't be made at all.

Of necessity our products must be produced in huge quantities—and reasonably. But that's not the only reason our Barberton plant has become one of the country's important sources of alkalies. Industry has learned from experience that we produce these "backstage" materials by the carload as carefully as if they were made—and used—by the ounce. You'll like the way Columbia products—backed by Columbia Technical Service—do their job for you.

If it's a Columbia Product—you've got the best

CAUSTIC SODA • SODA ASH
SODIUM BICARBONATE • LIQUID CHLORINE
MODIFIED SODAS • CAUSTIC ASH
CALCIUM CHLORIDE • PHOSFLAKE • CALCENE
SILENE • HENNIG PURIFIER

COLUMBIA
COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY

Columbia Chemical Division

30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

CHICAGO • BOSTON • ST. LOUIS • PITTSBURGH • CINCINNATI • CLEVELAND • MINNEAPOLIS • PHILADELPHIA

ELIMINATE UNCERTAINTIES OF COST AND SUPPLY!

USE THESE FELTON PRODUCTS TO SOLVE YOUR ESSENTIAL OIL PROBLEMS!

Berganella

(Replaces Oil of Bergamot)

Sassafrin

(Replaces Sassafras artificial)

Lavenola

(Replaces Oil of Lavender)

Javonella

(Replaces Oil of Citronella)

PERFECT PERFUME MATERIALS FOR

★ ALL TYPES OF SOAPS
★ WASHING POWDERS
★ LIQUID CLEANSERS
★ POLISHES AND WAXES

FELTON Quality

FELTON CHEMICAL CO., INC.

603 Johnson Ave., Brooklyn, N. Y.

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME OILS, ARTIFICIAL FLOWER AND FLAVOR OILS. BRANCHES IN PRINCIPAL CITIES.

These four manufactured products possess important advantages over natural essential oils. Among them are dependable low price, uniform quality, ready availability, and a clean lasting fragrance that actually adds sales appeal to your products.

Write NOW FOR SAMPLES AND QUOTATIONS!

An Idea

60 YEARS AHEAD OF ITS TIME

Today, we are hearing a great deal about American self-sufficiency in chemicals.

It is easy to think of this as an idea that is new and different.

As a matter of fact, this concept was the driving force behind the start of a great chemical development fully 60 years ago.

Rowland Hazard and William Cogswell talked of American chemical self-sufficiency in 1881 and with this thought in mind founded The Solvay Process Company.

Because of the foresight of these men, America is today independent in the matter of Alkalies, and because of that fact, enjoys a large measure of chemical self-sufficiency.

At no other period in American history has chemical self-sufficiency been of greater importance than it is at the present time. And yet, there is even more to the story of chemical progress than our national security.

This is the age of research development on many fronts . . . of an endless procession of new things . . . plastics, fabrics, fuels, metals, new types of glass, which are coming from the laboratories.

This is THE NEW WORLD OF CHEMISTRY in which Alkalies are of major importance. It is the world of new materials which took a long stride forward 60 years ago when the foundations of The Solvay Process Company were laid down.

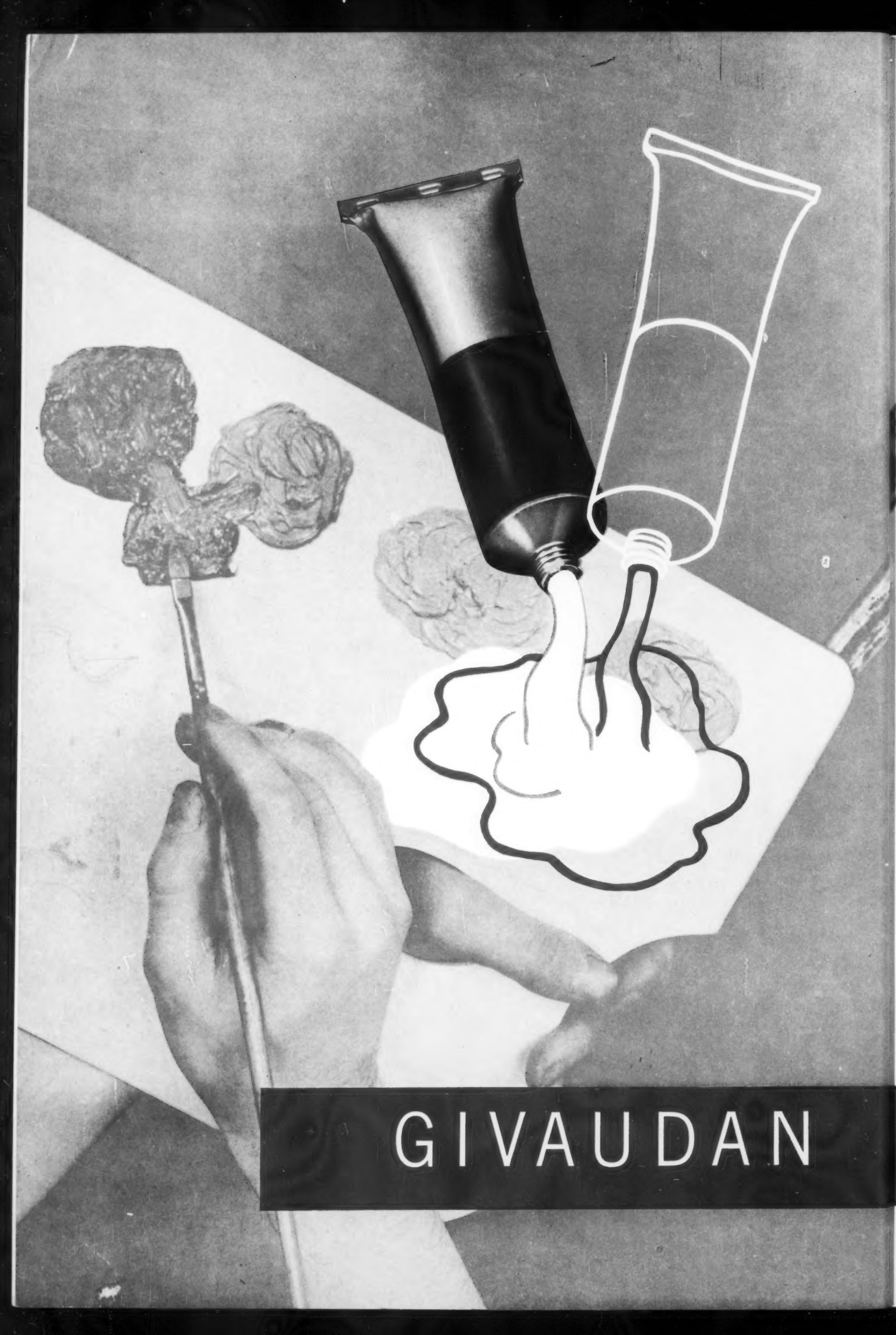
Now, as increasing quantities of pure grades and new forms of alkalies become more important than ever before, it is highly important to check sources of supply for reliability and capacity to meet all contingencies.

The present situation serves only to emphasize the advantages of buying your alkalies from Solvay.

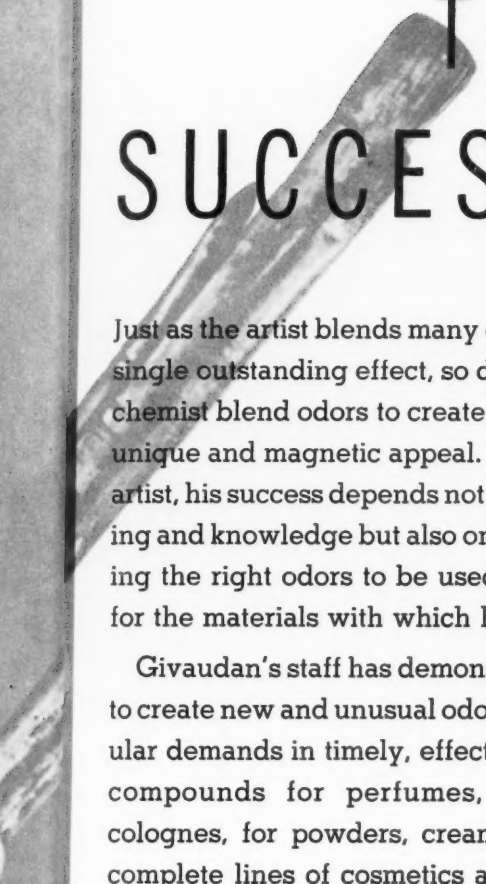
1881 *1941*

SOLVAY SALES CORPORATION • 40 Rector Street, New York, N. Y.

Alkalies and Chemical Products Manufactured by The Solvay Process Company


GIVAUDAN

THE GIFT OF SUCCESSFUL BLENDING



Just as the artist blends many colors to obtain a single outstanding effect, so does the perfume chemist blend odors to create a product with a unique and magnetic appeal. And, as with the artist, his success depends not only on his training and knowledge but also on his gift for sensing the right odors to be used – his "feeling" for the materials with which he works.

Givaudan's staff has demonstrated its ability to create new and unusual odors that meet popular demands in timely, effective ready-to-use compounds for perfumes, toilet waters, colognes, for powders, creams, lipsticks, for complete lines of cosmetics and for specially prepared products. Their success in the development of popular odors has been so outstanding that many leading perfumes and cosmetics on the market today are based on Givaudan products. Givaudan's knowledge of materials and special methods of producing them contributes constantly to economy in production and results in merchandising.

If you are considering adapting your lines to changing trends – in seasons or fashions – we invite you to call upon the experience and "blending gifts" of our staff. Outline your problem and ask us for suggestions. Samples of odors and specialties will be sent on request.

HELPING MEET TOMORROW'S DEMANDS FOR ESSENTIAL RAW MATERIALS

Essential oils of foreign origin are becoming increasingly scarce and high in price. Some materials now are absolutely unobtainable.

Even prior to recent developments which created this scarcity of natural products, our laboratory had developed several very interesting artificial products – notably Artificial Bourbon Geranium and Artificial Lavender. This line has been extended and many of our customers have already revised their formulae to use our artificial essential oils in all, or in part, as substitutes for the natural products. Time and experience have proved these products satisfactory, both in our laboratory and in actual consumption on a large scale.

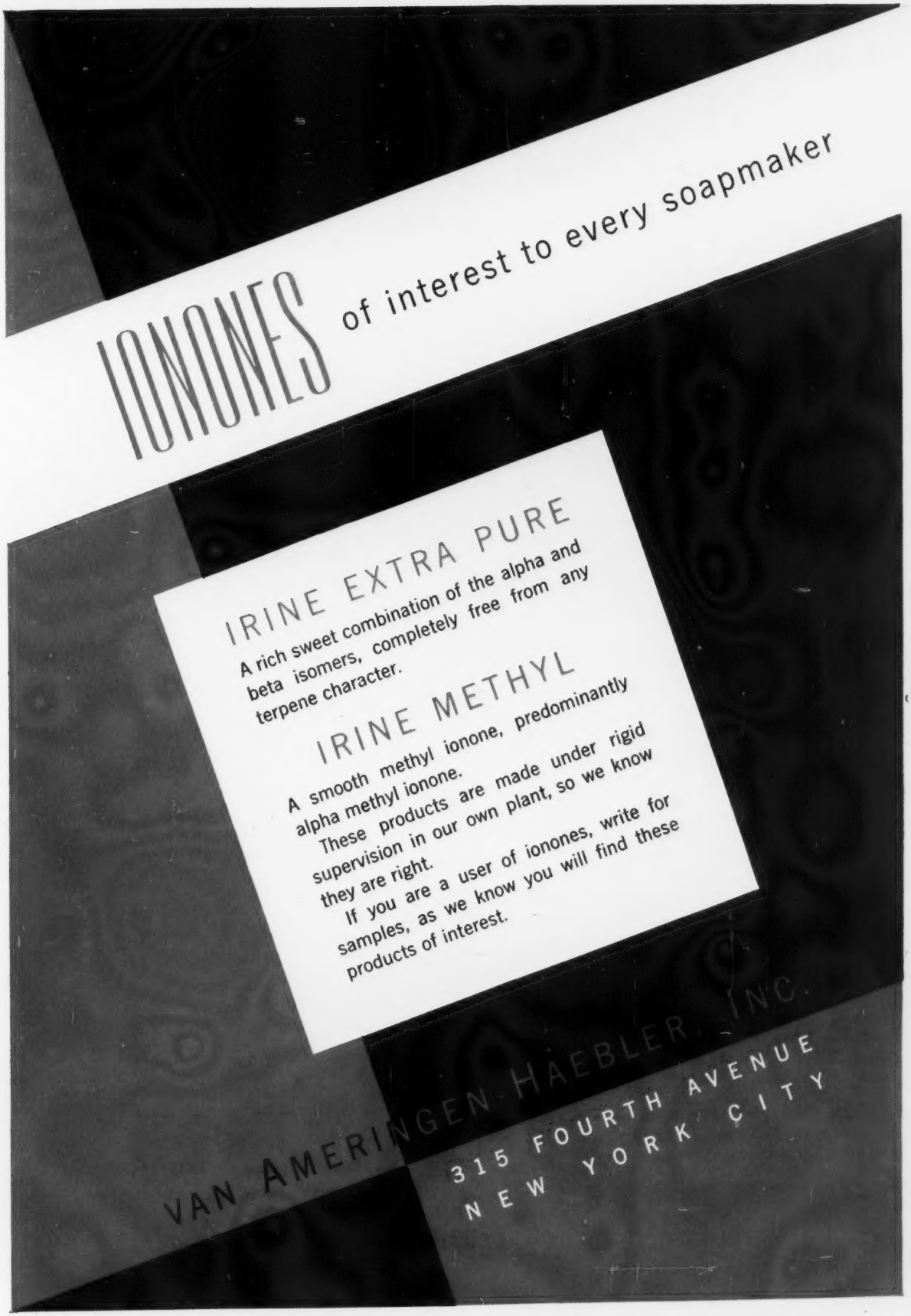
Though you may be well supplied at the moment to take care of your requirements for the coming months, you will find a definite economy, and you can free yourself from concern for the future by consideration of these substitute materials. We will be glad to furnish samples and complete information upon receipt of your request.

DELAWANNA, INC.

330 WEST 42ND STREET, NEW YORK, N. Y.

BISBEE LINSEED OIL USERS ENJOY THE TIME-SAVING, PRODUCT-PROTECTING *CONVENIENCE OF* KORK-N-SEAL

The Bisbee Linseed Company knows that in addition to widespread use among painters and decorators, its pure, raw Linseed Oil goes into countless *homes*—where it is used by *housewives*. Being foresighted, progressive merchandisers, the Bisbee people also know that time-and-labor-saving *convenience* is an important consideration with every user of their product—particularly *homemakers!* That's why you'll find easy-to-remove, simple-to-replace KORK-N-SEAL closures on their Linseed Oil cans. To learn *how* KORK-N-SEAL can increase the good-will-building appeal of *your* products, write **Williams Sealing Corporation, Decatur, Illinois,** *a division of Crown Cork and Seal Company.*

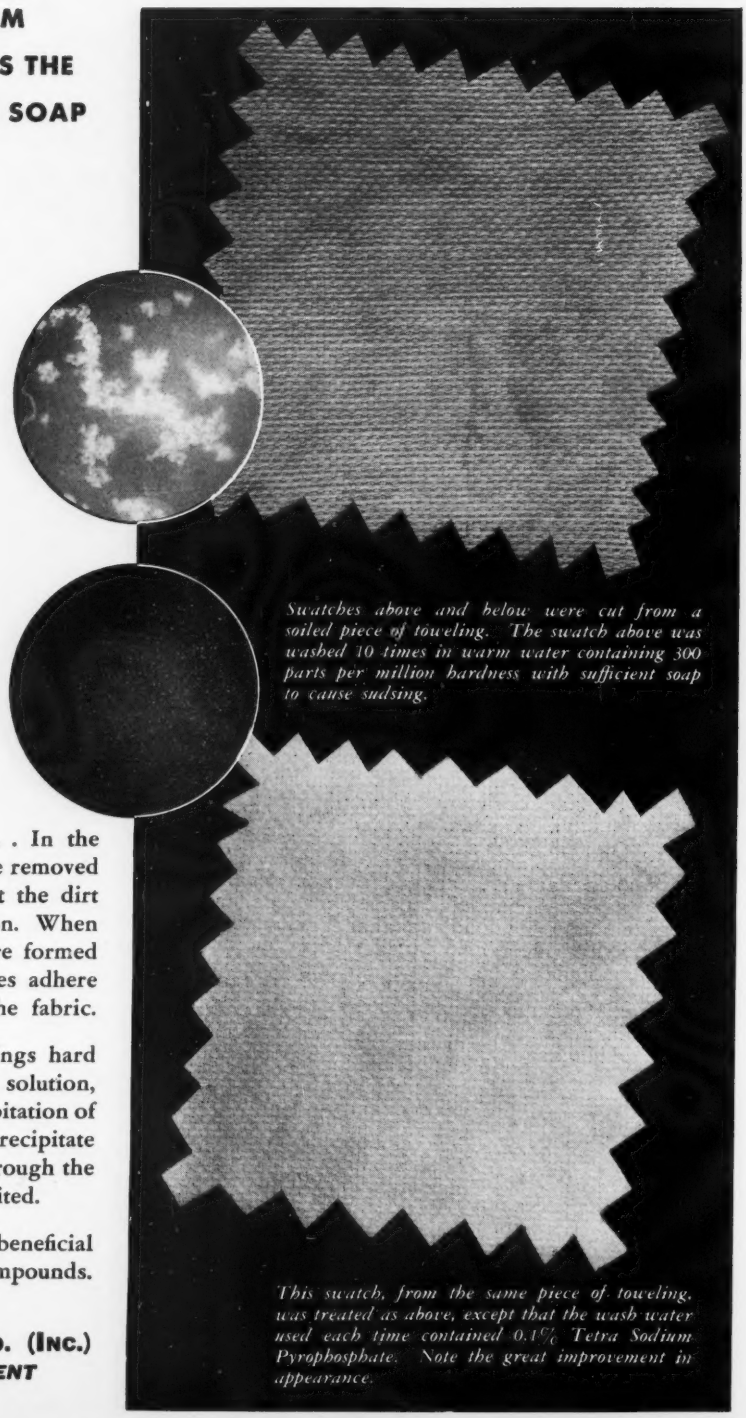

IONONES of interest to every soapmaker
IRINE EXTRA PURE
A rich sweet combination of the alpha and beta isomers, completely free from any terpene character.
IRINE METHYL
A smooth methyl ionone, predominantly alpha methyl ionone.
These products are made under rigid supervision in our own plant, so we know they are right.
If you are a user of ionones, write for samples, as we know you will find these products of interest.
VAN AMERINGEN-HAEBLER, INC.
315 FOURTH AVENUE
NEW YORK CITY

HERE'S THE EVIDENCE

DU PONT TETRA SODIUM PYROPHOSPHATE PREVENTS THE FORMATION OF INSOLUBLE SOAP

This photomicrograph shows the sticky precipitate formed when soap is added to water containing calcium and magnesium salts. Notice how the particles have gathered together into flocks and chains.

This photomicrograph shows the fine particles formed by soap in the same water, but with the addition of 0.1% Tetra Sodium Pyrophosphate. The particles are so small that they drift readily into the convection currents within the drop.



Swatches above and below were cut from a soiled piece of toweling. The swatch above was washed 10 times in warm water containing 300 parts per million hardness with sufficient soap to cause sudsing.

This swatch, from the same piece of toweling, was treated as above, except that the wash water used each time contained 0.1% Tetra Sodium Pyrophosphate. Note the great improvement in appearance.

ONE cause of gray, drab washing . . . . In the process of washing, dirt and grease are removed from the fine threads of the fabric. But the dirt particles remain in the washing solution. When insoluble hard water soap particles are formed during the washing, the fine dirt particles adhere to the soap and are redeposited on the fabric.

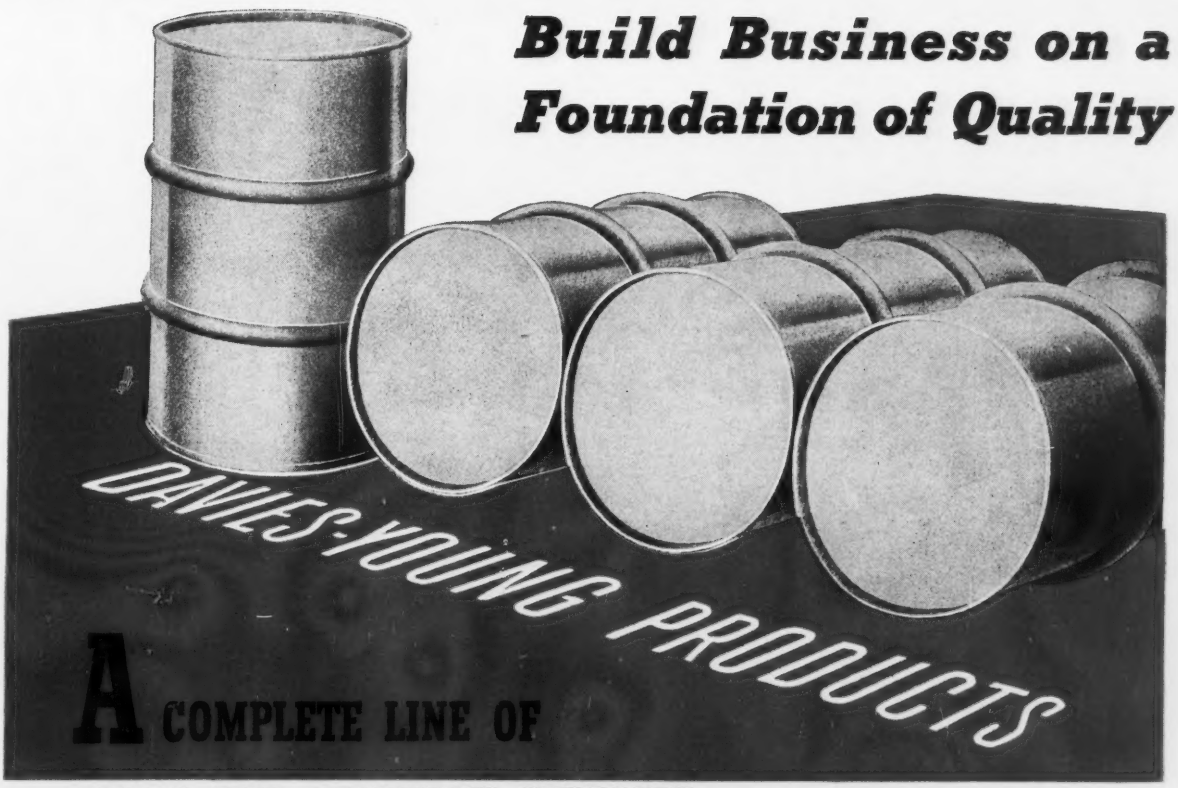
The action of TSPP is two-fold. It brings hard water salts, especially magnesia, into solution, removing components which cause precipitation of hard water soaps. It also forms a fine precipitate which remains in suspension, passing through the meshes of the fabric without being deposited.

It will pay you to take advantage of the beneficial effects of TSPP by adding it to washing compounds.

E. I. DU PONT DE NEMOURS & CO. (INC.)
GRASSELLI CHEMICALS DEPARTMENT
WILMINGTON • DELAWARE

DU PONT TETRA SODIUM PYROPHOSPHATE

Build Business on a Foundation of Quality



SOAPS AND SANITARY SUPPLIES *FOR ALL YOUR NEEDS*

OIL SOAPS

Scrubbing soaps and cleansers made from vegetable oils, including such Special Oil Soaps as U.S.P. No. 11, Surgical Green Soap and others.

LIQUID SOAPS

Liquid (Floor) scrubbing soaps, compounded for specific types of floors—Buckeye, Sani-Scrub, Florex, Ex-Alk.

LIQUID TOILET SOAPS

Neutral Soaps, made under rigid laboratory control, insuring clearness, uniform quality, uniform soap content. Line includes concentrated Liquids and Special Soaps such as Surgical Liquid, Infants, Castile and Tincture of Green Soap.

CONCENTRATED SOAP BASES

For producing Liquid Shampoos and Toilet Soaps and Liquid Scrubbing Soaps.

LIQUID FLOOR WAXES AND FINISHES

Beamax and Cirene self-polishing waxes; Buckeye Liquid Wax (requiring polishing); Paste Wax, Dance Floor Wax; Gym Finish; Floor Seal.

POLISHES

Metal Polish, Furniture Cream, Furniture Polish.

DISINFECTANTS

Pine Oil and Coal Tar Disinfectants; Cresol Compound U.S.P., and Buckeye-Cres. Deodorant Blocks and Crystals.

INSECTICIDES

Fly Sprays, Moth Sprays, Contact Insecticide and Roach Powder.

DAVIES-YOUNG PRODUCTS

THE DAVIES-YOUNG SOAP COMPANY
DAYTON • OHIO

THE DAVIES-YOUNG SOAP CO.
Dayton, Ohio

We would like to examine your complete Catalog of Soaps and Sanitary Supplies.

Name .....
Address .....
City and State .....

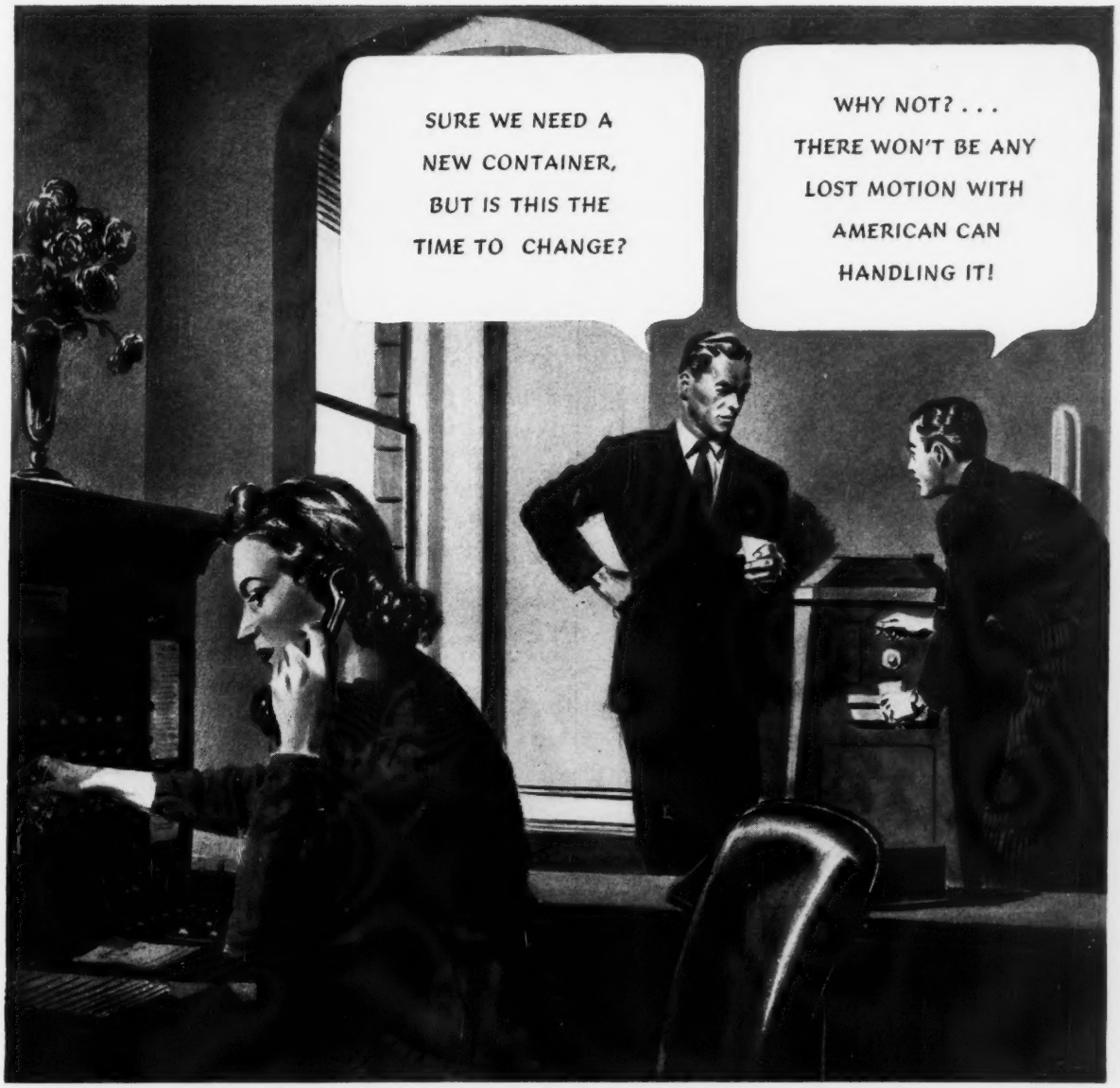
University of Idaho LIBRARY MOSCOW IDAHO

WE'VE drafted him ourselves to wish you the Season's Greetings and to thank you for your whole-hearted acceptance of Ampion's Products.

But more important, he's been drafted by an ever growing group of old friends and new customers to serve their needs in that cordial, friendly spirit, that folks go for in a big way.

LIQUID SOAP DISPENSERS
LIQUID SOAPS AND BASES
OILS, SOAPS AND LIQUIDS
DISINFECTANTS
INSECTICIDES
WAXES AND POLISHES
DEODORIZING BLOCKS
CONTAINERS AND ALLIED PRODUCTS

AMPION CORPORATION
4-88 FORTY SEVENTH AVE.
LONG ISLAND CITY, N. Y.


SURE WE NEED A NEW CONTAINER, BUT IS THIS THE TIME TO CHANGE?
WHY NOT? . . . THERE WON'T BE ANY LOST MOTION WITH AMERICAN CAN HANDLING IT!

"You know how they do things, Paul. They'll plan every step in advance. They'll coordinate every move with our operations. Then when we give the word, the job will move ahead without a hitch. Why, we'll have that new package in production before we know it! Let's call them in tomorrow and start things moving."

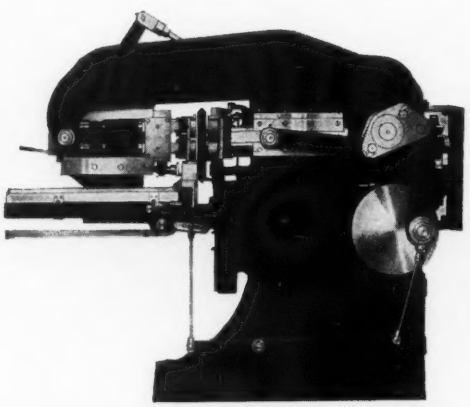
CANCO AMERICAN CAN COMPANY, 230 PARK AVENUE, NEW YORK, N. Y.

All JONES PRESSES *are good*

. . . *But* there comes a time when even they, after ten or fifteen years gruelling labor, operating from 1 to 3 shifts daily,

are all in—no longer good

STRAINED, cracked and rusted, with shafts, bearings and plungers worn out of all shape and precision, their operation costs more than it is worth. No human contrivance will last forever. Don't expect the impossible. Don't waste money trying *to repair* a machine that is *worn out* from drive to offtake. It costs more to make such a machine do really first class work, temporarily, than to install a new one, a new model that will last much longer and do a class of work never before attainable. Perfect pressing is in demand now for both laundry and toilet soaps. Though you have an old type press in good condition it would still pay to install in its place a new model TOGGLE OPERATED PRESS, for the sake of greater economy, noiseless, nerve-saving operation, plus far better looking and more salable soap.



Type K Laundry Soap Press

R. A. JONES & COMPANY, INC.

P. O. Box 485 Cincinnati, Ohio

The Standardized *Constant Motion Cartoner* packages, bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds and inserts direction sheets and corrugated board liners with the loads.

AS THE EDITOR SEES IT

AS the new year gets under way, we are none too optimistic about the outlook. There is no use kidding ourselves. Right now, we in the United States are living in a fool's paradise. Raw materials continue plentiful and cheap, business is good and the margin of profit in most industries is much better than it has been in many a moon. Factories are running full blast and unemployment has been reduced sharply. More money is being made and more spent. But, the whole economic set-up is born of war conditions, and as such is basically unsound and unhealthy.

The nations of Europe continue to rend each other with bomb and shell, and to strangle one another with blockades. In the United States, we spend billions upon billions in our frenzied efforts to rearm. Little thought is being given right at the moment to payment of the bill, because the time for that little formality is not yet upon us. But eventually that time will arrive, and when it does, we fear that the burden upon industry and other tax-payers will be far heavier than anything the present generation has ever experienced.

Maybe not this year, or even next, but sooner or later, the disrupted economy of the world must be readjusted, and the process is going to be painful, very painful. There will be no winner in the conflict abroad, no matter who is victor in the battles. And in spite of our present high-wage prosperity, the United States will likewise be listed among those who have lost when exhaustion ends the conflict. The aftermath of the previous world war is still too fresh in our memories to permit expression of anything but blunt pessimism. An invading army has never yet permanently solved an economic problem, and in our opinion, never will.

From the angle closer to home, there is little that American manufacturers can do, but carry on and eat their cake while they may. If inflation comes, being prepared is half the battle,—and to us, full oil tanks represent the only sensible position for any soaper, large or small, today. Inflation may not come, but there is no doubt but that sooner or later the economic bill collector will be around to settle his account.

REPORTS have been received on the purchase of soap and other specialties for medical units of the U. S. Army on so-called "informal" bids. In this type of purchasing, as far as we can find out, only two or three bids are asked for, the order is placed with one or more plants, and the price and other details are treated with secrecy. Manufacturers not included in the "informal" bidding, report that they are unable to secure information of any kind.

If the facts are as they have been reported to us, we are somewhat puzzled, even though the method may be perfectly legal. Certainly, there is no emergency today in the matter of soap or disinfectant supplies,—competition for business is as keen as ever in the industry. And what other reason could there be outside of emergency purchasing which would eliminate the usual method of open bids and awards even on a single lot of potash soap, disinfectant, or similar material?

PRICES which are too low, are very generally viewed with suspicion. It is typically American upon noting that anything is offered too cheaply, to inquire: "Where's the catch?" and this attitude has developed over the years as a result of good cause. Millions have been stung by trying to get something for nothing,—and when we attempt to buy below what constitutes a fair price, we are trying to get something for nothing.

Now, when it comes to public bids for a hundred and one items, we are constantly seeing this age-old rule apparently violated by purchasing agencies. Bids, far below competing figures,—bids which to us do not look just right,—are being accepted right along. We have many-a-time wondered about the materials delivered,—wondered if they really did meet specifications, if they really were tested at all. In view of some happenings in the past with which we are familiar, this attitude of skepticism is certainly not surprising.

It just seems to us that too many public bids, or at least that of the successful bidder, are too low for the good of the buyer, whatever agency it may be, federal, state or local. We still feel that any price, public or private, which is distinctly below competing levels, and sometimes below cost of production, ought in the light of good sense be viewed with suspicion.

IN the soap industry, there is some disagreement with our speculation last month that the soap production of the country in 1940 would equal the figure of three-and-a-half billion pounds of 1939. One view is that the output for 1940 will show a drop of close to ten per cent under 1939 when the figures are tabulated. It is pointed out that 1939, particularly the last quarter following the outbreak of war in Europe, was an exceptional year, and that the first half of 1940 showed a sharp drop. This is explained by the fact that soap buyers, after the first few months of war, had become reassured that there would be no scarcity or skyrocketing of either soap or fat prices, which condition they had anticipated when they purchased so heavily during the closing months of 1939.

Thus, to set straight any who may have been misled by our speculation regarding 1940 figures, we give the views of those in the industry who do not agree.

IF CERTAIN statements in advertising copy are forbidden by the Federal Trade Commission, the same thought may not be put forward or implied merely by changing the wording. In other words, an advertiser may not circumvent an order of the Commission by "writing around" it. This contention has recently been sustained by a court decision in a case where the Commission hailed a manufacturer into court for violation of a cease and desist order. It is a significant decision which establishes a precedent against trick advertising copy designed specifically to avoid an order of the Commission under the Wheeler-Lea Act.

SUPPLYING materials to industries which are working on government orders in time of war or other emergency has always in the past been rather a profitable business. The wider margin in this kind of business makes it very tempting to manufacturers, so tempting that they hate to turn it down. Often as a consequence, their old customers of years standing are pushed aside in the rush of "making hay while the sun shines." Old accounts are lost, usually going to suppliers with a keener eye to the future,—and when the emergency is over, as all emergencies eventually are, the manufacturer in question finds himself in the position of most "war baby" enterprises. We have seen it happen before, and it can happen again, but not to the manufacturer who knows on which side his bread is buttered.

Are Soaps Germicidal?

By Dr. E. G. Klarmann and Dr. V. A. Shternov*

Lehn & Fink Products Corp.

IT IS a somewhat peculiar phenomenon, that, as a rule, it is simpler to obtain a response to the disclosure of new facts, than a recognition or even a hearing for an attempt to assign to older facts their proper measure of significance. The mind, even the so-called technical mind, often seems to resist any outside influence directed toward the correction of ideas stored away comfortably in the individual's repository of acquired information; and this is why statements or conclusions based on faulty or incomplete premises are by no means exceptional. This general observation may be applied to the specific problem of the antibacterial properties of soaps. Although numerous scientific and technical data have been published which have clarified the problem to a considerable extent, carelessly expressed or utterly unfounded claims for an unqualified germicidal potency of ordinary washing or toilet soaps, or even statements alleging the superiority of such soaps to disinfectants, are pronounced or published not only by the self-appointed lay advisers of the consuming public, but, what is infinitely more serious, by some of those whose training and position should entitle them to the designation of "experts" in this and in related fields.

The difficulty presented by this situation is not one of recent making. It has been in existence for some time. Several years ago, a critical review of a considerable number of pertinent papers was prepared and published, in an effort to bring some of the published but apparently neglected data on the antibacterial action of soaps to the attention of those who might be interested[1]. Following are portions of its summary: "As to the action of chemically pure soaps, i. e., of compounds obtained by neutralization of pure fatty acids, there are many regularities to be found in the relationship between their chemical constitution and their antibacterial action. Thus in the homologous class of soaps of saturated fatty acids the antibacterial action is a direct function of the length of the carbon chain, the position of the maximum effect varying with regard to the different microorganisms. The soaps of unsaturated fatty acids display an almost specific efficacy against pneumococci and certain streptococci while showing little action upon staphylococci or the organisms of the typhoid-colon group, under conditions comparable to those prevailing in practical use. There appears to exist a definite relationship between their degree of unsaturation and their effect upon pneumococci."

"The results obtained with the pure soaps allow direct conclusions to be drawn as to the antibacterial action of different technical soaps of which they are constituents. Moreover, a number of papers dealing with bacteriological experiments on such soaps, show indisputably their bactericidal efficacy against various pathogenic organisms; it is submitted that this experimental evidence lifts the soaps from the class of mere adjuncts to cleanliness and imparts to them a definite hygienic value. Nevertheless, a number of researches demonstrate conclusively that certain important pathogenic microorganisms, or rather the more resistant individuals among them, are not likely to succumb to the antibacterial action of the technical soaps under the customary conditions of use; therefore, soaps cannot and should not take the place of disinfectants and antiseptics."

These conclusions were drawn on the basis of data published up to 1933. A survey of literature covering the period between 1933 and 1940 did not elicit anything of a contradictory character. To avoid redundance, the reader is referred to the list of papers published up to 1933 which is appended to the article mentioned above; as to pertinent work published after 1933, reference is made to the experiments of M. Bayliss[2] dealing with the effect of the chemical constitution of soaps upon their antibacterial properties.

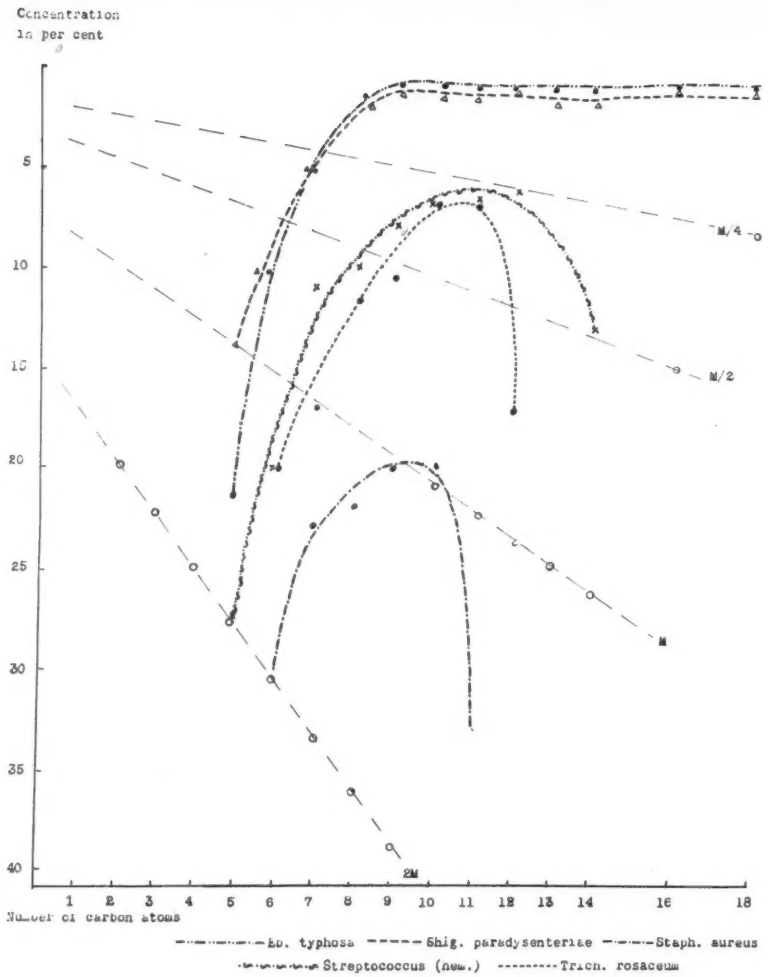
Although, as has been pointed out before, available information is fairly conclusive with regard to the problem at hand, it was decided to carry out a series of confirmatory tests in an effort to obtain data by means of the now generally accepted technic of determining the existence or absence of germicidal action, viz., the F.D.A. method. In order to obtain supplementary information as to the antibacterial action of soaps, bearing upon the purposes for which soaps are used, the following additional microorganisms were used in the bacteriological tests, besides *Eb. typhosa and Staph. aureus*, specified by the F.D.A. method: *Shigella paradysenteriae*, *Streptococcus (hemol.)* and *Trichophyton rosaceum*.

The testing technic involving the use of the microorganisms not specified by the F.D.A. method followed that of F.D.A. in most respects, except for the details of composition of the nutrient media which had to be adjusted to the biological requirements of the individual microorganisms. These modifications, as well as the phenol resistance of the several test-organisms have been given in a previous publication[3].

*Paper presented by Dr. Klarmann before the 27th annual meeting, National Assn. of Insecticide & Disinfectant Mfrs., New York, Dec. 1940. Work done at Plaut Research Laboratory, Bloomfield, N. J.

For the sake of completeness it is emphasized at this point that the F.D.A. procedure is an "end method"; in other words a bactericidal effect is shown when the last viable microbe of a suspension of microbes has been killed, thus eliminating the possibility of multiplication and restoration of a potential risk. This is in contrast to a "counting method" which enables the observer to follow the gradual decrease in the number of viable microbes, e. g., as a result of exposure to the action of an antibacterial agent, over a period of time. Mention is made of the latter method because it has been used in bacteriological studies on soaps, as reference to older literature will confirm[4]. However, this is not the place to argue the respective merits or disadvantages of the two methods. Firstly, it is held here, as has been held by others previously, that a mere reduction in the bacterial count of a pathogenic microorganisms, no matter how extensive, does not suffice, in view of the ever present possibility of renewed multiplication after the antibacterial effect has ceased; secondly, since as a matter of record, washing and toilet soaps are often claimed to compare with disinfectants, it is proper that their antibacterial action should be evaluated with the aid of the same methods which are applied to disinfectants, by general agreement as well as by official sanction, and that the various terms descriptive of antibacterial action, such as "disinfectant," "antiseptic," etc., should retain their accepted and officially enforced connotation, when applied to soaps.

However, since soaps are used frequently with warm water, both for general cleaning of inanimate matter and for bodily hygiene, it was felt that the tests should be conducted at 37° C. rather than at 20° C.; incidentally, because of their positive temperature coefficient[5] this detail of technic would tend to place the soaps in a more favorable position. It was the intention generally to avoid any refinements or complications of the testing method which would tend to increase the distance between practical application and testing technic.



This is why also no attempt was made to standardize the solutions for test at any definite pH.

In the most common sense of the term, a soap is a sodium or potassium salt of fatty acids, the acid radical containing as a rule from 12 to 18 carbon atoms; ordinarily the soap does not contain just one salt but rather a mixture of sodium or potassium salts of several different fatty acids. The designation "soap" is applied sometimes to alkali salts of organic acids, other than those of the "fatty" series (naphthenic soaps, rosin soaps, etc.). At any rate, the bacteriological properties of a household soap depend ultimately upon those of its constituting salts of the fatty acids; and this is why it was deemed desirable to reinvestigate the homologous series of the pure potassium salts of the fatty acids. (Potassium salts are more suitable for this purpose than sodium salts because of their better dispersibility in water.)

It may be added in passing that while the common, unlike the scientific, designation "soap" would not cover salts of aliphatic acids containing less than 12 carbon atoms, and while the physical evidence of true "soap" character is not obtained with salts of fatty acids with less than eight carbon atoms, the inclusion in this study of the lower members of the series of the fatty acid salts was decided upon, for the sake of continuity and completeness.

Potassium Soaps of Saturated Fatty Acids

THE following Table I gives the results obtained with the homologous series of potassium salts of saturated fatty acids

TABLE I
Potassium Soaps of Saturated Aliphatic Acids

	Original solutions of potassium salts					Minimum germicidal concentrations in 5, 10 and 15 min.									
ACIDS	*Number of carbon atoms*	*Mol. weight*	*Stock solution*	*Gram /L*	*%*	*Eb. typhosa Dilutions of stock solution*	*% in 10 min.*	*Shig. paradysenteriae Dilutions of stock solution*	*% in 10 min.*	*Staph. aureus Dilutions of stock solution*	*% in 10 min.*	*Streptococcus Dilutions of stock solution*	*(hemol.) % in 10 min.*	*Trich. rosaceum Dilutions of stock solution*	*% in 10 min.*
Formic	1	84.13	2M	168	17	non-germicidal	⊖	non-germicidal	⊖	non-germicidal	⊖	non-germicidal	⊖	non-fungicidal	⊖
Acetic	2	98.14	2M	196	20	non-germicidal	⊖	non-germicidal	⊖	non-germicidal	⊖	non-germicidal	⊖	non-fungicidal	⊖
Propionic	3	112.17	2M	224	22	non-germicidal	⊖	non-germicidal	⊖	non-germicidal	⊖	non-germicidal	⊖	non-fungicidal	⊖
Butyric	4	126.18	2M	252	25	non-germicidal	⊖	non-germicidal	⊖	non-germicidal	⊖	non-germicidal	⊖	non-fungicidal	⊖
Valeric	5	140.21	2M	280	28	1:1 —1:1.5—1:2	20	1:1.5—1:2 —1:2	14	non-germicidal	⊖	1:1—1:1—1:1	28	non-fungicidal	⊖
Caproic	6	154.23	2M	308	31	1:3 —1:3 —1:3	10	1:3 —1:3 —1:3	10	1:1—1:1 —1:1	31	1:1—1:5—1:1.5	20	1:1.5—1:1.5—1:1.5	20
Heptoic	7	168.26	2M	337	34	1:7 —1:7 —1:7	5	1:5 —1:7 —1:7	5	1:1—1:1.5—1:2	22	1:3—1:3—1:3	11	1:2 —1:2 —1:2	17
Caprylic	8	182.27	2M	365	37	1:15—1:20—1:20	2	1:10—1:15—1:15	2	1:1—1:1.5—1:1.5	22	1:3—1:3—1:5	10	1:3 —1:3 —1:3	12
Pelargonic	9	196.30	2M	393	39	1:35—1:40—1:50	1	1:30—1:30—1:35	1	1:2—1:2 —1:2	20	1:3—1:5—1:7	8	1:3 —1:3 —1:3	11
Capric	10	210.31	M	210	21	1:15—1:20—1:20	1	1:10—1:10—1:10	2	1:1—1:1 —1:1	20	1:3—1:3—1:5	7	1:2 —1:3 —1:3	7
Undecylic	11	224.34	3M/2	337	34	1:30—1:30—1:40	1	1:15—1:15—1:15	2	1:1—1:1 —1:1	37	1:3—1:5—1:5	7	1:3 —1:3 —1:3	7
Lauric	12	238.36	M	238	24	1:15—1:20—1:30	1	1:15—1:20—1:20	1	non-germicidal	⊖	1:5—1:5—1:5	6	1:1 —1:1.5—1:1.5	18
Tridecylic	13	252.31	M	252	25	1:20—1:20—1:25	1	1:10—1:15—1:15	2	non-germicidal	⊖	1:2—1:3—1:3	6	non-fungicidal	⊖
Myristic	14	266.39	M	266	27	1:20—125—1:25	1	1:7 —110—1:15	2	non-germicidal	⊖	1:1—1:2—1:3	13	non-fungicidal	⊖
Palmitic	16	294.44	M/2	147	15	1:10—1:15—1:20	1	1:15—1:20—1:25	1	non-germicidal	⊖	1:1—1:1.5—1:2	10	non-fungicidal	⊖
Stearic	18	322.49	M/4	81	8	1:5 —1:7 —1:10	1	1:5 —1:7—1:10	1	non-germicidal	⊖	non-germicidal	⊖	non-fungicidal	⊖

⊖ Ineffective in the highest concentrations used (stock solutions).

containing from one to 18 carbons. The concentration of the stock solution is expressed in Mols., in Grams per liter and in per cent. Although it was possible to prepare 2 M stock solution up to and including potassium pelargonate (with nine carbons) lower concentrations had to be resorted to in the case of the soaps with a higher molecular weight because of decreasing solubility.

The potassium salts of the fatty acids with one to four carbon atoms (formic to butyric) are neither germicidal for the four bacteria nor fungicidal for *Trichophyton* in five to 15 minutes at 37° C., in the highest concentrations used. The first evidence of antibacterial effect is shown by potassium valerate whose 2 M, i.e., 28 per cent stock solution is effective against *Eb. typhosa* and *Streptococcus* in five minutes (in one-half the original concentrations also with respect to *Eb. typhosa* and *Shig. paradysenteriae* in 15 minutes) though not effective against *Staph. aureus* or *Trichophyton rosaceum*. With lengthening of the carbon chain the antibacterial efficiency increases, but its maximum is not reached at the same number of carbon atoms with all test organisms, as shown more clearly in Fig. 1 (in which the ten minute data are used); against *Eb. typhosa* and *Shig. paradysenteriae* a maximum effect is evidenced by a whole series of soaps with 9 to 18 carbon atoms (in one per cent solutions), while with *Streptoccoccus* a maximum efficacy is shown by potassium caprate, undecylate and laurate, containing respectively 10, 11 and 12 carbon atoms. The greatest resistance is shown by *Staph. aureus;* only high concentrations (of the order of 20 to 30 per cent) of the soaps with 6 to 10 carbon atoms appear to be germicidal, the maximum potency being shown by potassium pelargonate and caprate, with 9 and 10 carbon atoms respectively. Soaps with 12 or more carbons in the chain are non-germicidal for *Staph. aureus* in 5, 10 and 15 minutes. *Trichophyton rosaceum* appears to be about as resistant as Staphylococcus.

TABLE II
Toilet Soaps

Brands	Minimum germicidal concentrations in 5, 10 and 15 min.				Other bacteriological tests
	Eb. typhosa		*Shig. paradysenteriae*		
	Dilutions of Stock Solution	*% in 10 min.*	*Dilutions of Stock Solution*	*% in 10 min.*	
Soap C ..	1:1.5—1:2—1:3	5	1:2—1:3—1:3	3	10% stock solutions are non-germicidal in one minute for Eb. typhosa and Shig. paradysenteriae. They are non-germicidal in 15 min. or less for Staph. aureus, Streptococcus (hemolytic) and Trich. rosaceum.
Soap F ..	1:1 —1:2—1:2	5	1:2—1:3—1:3	3	
Soap I ..	1:2 —1:2—1:2	5	1:2—1:3—1:3	3	
Soap J ..	1:2 —1:2—1:2	5	1:2—1:3—1:3	3	
Soap L ..	1:2 —1:2—1:2	5	1:2—1:3—1:3	3	
Soap P ..	1:1.5—1:2—1:2	5	1:2—1:3—1:3	3	
Soap W ..	1:1.5—1:2—1:2	5	1:1—1:2—1:3	5	

Toilet and Washing Soaps

THUS it appears that there are a number of potassium salts of fatty acids which display a distinct germicidal effect under the conditions of the experiment. Since the most generally effective of them are those with 8 to 10 carbons in the chain one might conjecture that the usual run of toilet or washing soaps would not be possessed of any very pronounced germicidal properties since the varieties of oils and fats from which such soaps are obtained do not normally contain any of the fatty acids in question. This deduction is borne out by experiments, which are summarized in Table II. The several soaps identified by a code letter in the first column are all well known commercial brands. Only against the two test-microorganisms of the typhoid colon group, *Eb. typhosa* and *Shig. paradysenteriae* do their five per cent solutions show an effect in 10 minutes in all cases; in four cases 7½ or 10 per cent solutions are effective in five minutes. With respect to *Staphylococcus aureus*, *Streptococcus* and *Trichophyton rosaceum* they are non-germicidal (or non-fungicidal) even after 15 minutes in 10 per cent solutions.

In order to obtain a better approximation to practical conditions a testing interval of one minute was included. A number of actual observations revealed that the average individual, in applying toilet soap, exposes the skin of his hands to the action of the soap lather for less than one minute; quantitative assays of such soap lather yielded in most cases 8 to 10 per cent of anhydrous soap. In view of these practical considerations, it is highly significant that 10 per cent solutions of all seven toilet and washing soaps were not germicidal for any of the five test-organisms in one minute. And it must be borne in mind that these test-organisms have not been selected at random; all of them are per se as well as by representation, of distinct pathogenic or epidemiologic importance.

Now it might be argued and, as a matter of fact, it has been argued) that from a bacteriological point of view the same criterion of efficacy should not be applied to a toilet soap and a disinfectant; the reason advanced for such an argument is that while the latter must kill bacteria in order to be effective as claimed, the former will produce a comparable effect through detergent action which loosens the bacteria from the surfaces treated and helps to carry them away.

To accept such an argument one would have to surrender the criterion of germicidal potency, viz., the bacteriological test. Moreover, one would have to surrender the accepted definition of terms like "germicidal" or "disinfectant" since a logical application of this type of reasoning would, in its ultimate sequences, ascribe "germicidal" or "disinfectant" qualities to other purely mechanical processes such as wiping or brushing, both of which might be expected to bring about a reduction of the bacterial count if applied to a contaminated surface. It should be repeated here that it is not intended to describe soaps as purely mechanical aids in effecting cleanliness; their antibacterial character has been stressed before, as well as in the present paper. What is intended here, is to point out the fallacy of claims for the disinfectant action of household soaps, or for their alleged superiority, as germicidal agents, over the true disinfectants and germicides, because, as has been shown, the application of the accepted testing criteria of disinfectant and germicidal action in the proper meaning of these terms, discloses the soaps as being far from capable of satisfying these criteria.

"Technical" Soaps

TO round out this series of investigations, it was deemed desirable to investigate by the same technic, potassium soaps obtained by the saponification of a number of vegetable oils. Table III reproduces the results obtained. With respect to the representatives of the typhoid-colon group, *Eb. typhosa* and *Shig. paradysenteriae*, coconut oil soap appears to be the most effective. No germicidal effect is registered, however, with regard to *Staph. aureus* or *Trichophyton rosaceum* by a 12 per cent solution of this soap in 15 minutes. A high concentration of castor oil soap displays somewhat of a specific effect with regard to *Staph. aurus* while being non-germicidal for the typhoid-colon organisms and the fungus. Generally, it appears that *Trichophyton rosaceum* is resistant to all five soaps derived from fatty oils. Here, too, attention is called to the results of the one-minute tests referred to in the footnote. All stock solutions, i.e., the highest concentrations used, were found to be non-germicidal in one minute (except in the case of coconut oil soap which was germicidal for *Eb. typhosa* in a twelve per cent solution). The

(*Turn to Page* 70)

LIQUID TOILET SOAP...

A discussion of raw materials, processing, and characteristics mostly from the angle of the small manufacturer

By Dr. C. A. Tyler

BECAUSE the methods of some small manufacturers of liquid soap are careless and haphazard, resulting in a cloudy liquid of which little more can be said than that it contains soap, all small manufacturers should not be judged on that basis. Whether liquid soaps are good, bad or indifferent does not depend altogether on the size of the soap plant, although the large producer naturally has an edge on the small one. If Jones makes twice as much liquid soap as Brown, his gross production cost should not be twice as great, particularly labor costs, although if the quality of the soap is the same the value of Jones' output is double that of Brown's.

Those not interested in the quality or appearance of their product can naturally expect to sell only by underbidding their competitors. This they do also by cutting down the soap content of the liquid, a device that succeeds only because too many institutions, jobbers and others buy entirely on a price basis.

To smaller manufacturers of liquid soaps who hope to win and hold satisfied customers, some suggestions and precautions may be of value. Coconut oil, the basic stock for most liquid soaps, as purchased ordinarily is of the commercial or Ceylon grade. Some manufacturers of shampoo liquids use Cochin type oils of higher quality, and others refine their oils before use, but most manufacturers do not have the equipment for doing this and get along very well without it. Since liquid soap is made by the semiboiled process, the glycerine and other constituents originally present remain in the soap except as they can be rendered insoluble and separated by settling and other physical means from the body of the liquid. Most liquid soaps for dispenser use are made from straight coconut oil, although shampoo liquids sometimes contain various percentages of corn, olive and other oils. Oils other than coconut usually give the liquid soap more body and reduce its harsh effect on the skin.

One manufacturer adds about 10 per cent of castor oil to his shampoo to promote solubility. Since the main fatty acid of castor oil contains a hydroxy group, the effect on solubility is similar in some measure to that of adding alcohol, which also contains a hydroxy group. Another manufacturer combines coconut, olive and castor oils, and also adds alcohol to increase solubility. A manufacturer of a 15 per cent liquid soap uses about 8 pounds of sulfonated oil in 100 gallons of finished soap. A commercial liquid soap intended as a "scrub-up" soap for surgeons' use in hospitals contains 40 per cent anhydrous soap and is made from 75 per cent coconut oil and 25 per cent olive oil. Another commercial "scrub-up" soap is made entirely from corn oil.

Shampoos labelled "olive oil" are supposed to be made wholly of olive oil, but mostly contain some coconut oil. Under certain conditions of labelling, they may contain a

blend of which olive oil is one ingredient. An excerpt from the Federal Trade Commission's ruling on this point follows:

"The order prohibits the respondents from (1) representing in any manner that a soap which does not contain olive oil to the exclusion of all other oils is an olive oil soap; (2) using—brand names or labels containing the word 'Olive' or any equivalent term, to describe soap the oil content of which is not wholly olive oil. It permits the respondents to use brand names containing the word 'Olive' to describe soaps containing olive oil combined with other oil or oils, only on the condition that respondents shall clearly, conspicuously and truthfully designate that such soaps are not made wholly of olive oil, and providing also that olive oil must be present in such soaps in an amount sufficient substantially to effect its detergent or other qualities."[1] Olive oil has become so expensive that its use may be discontinued shortly.

For the small manufacturer who wishes to concentrate on dispenser soaps and who wishes to make a satisfactory product as inexpensively as possible, the use of straight coconut oil simplifies the process and reduces cost, although the price of corn oil for example is about the same or may be slightly less than that of coconut. One advantage of coconut oil is that it gives a higher yield of soap. For instance a thousand pounds of coconut oil will yield about 1260 pounds of anhydrous soap plus glycerine, while a thousand pounds of corn oil or cottonseed oil will yield about 1190 pounds of anhydrous soap plus glycerine. Coconut-oil soap possesses the further advantage of being more soluble than other soaps—except castor-oil soap—and of being resistant to hard water. Also and most important, it is easier to saponify, requiring about half the time of boiling with a corresponding decrease in the cost of steam, and release of equipment for further use. The difference in ease of saponification is so marked that a manufacturer of high-quality shampoo liquids finds it economical to saponify each of the oils used separately, and to combine them in the desired proportions after saponification.

The second necessary raw material, caustic potash, is sold as a 90 per cent solid in cake form in drums, or as flakes, and as a 45 per cent solution. The price of the solution is just half that of the solid in flake form, with a corresponding reduction in railroad rates for the solution so that the purchaser does not have to pay for the transportation of the water.

As a choice between the flake, solid and the liquid at an equivalent price, the liquid would be preferable as saving the trouble of making up into solution. The most common form purchased for making liquid soap is the solid cake packed in drums. In preparing these, molten caustic potash is run into very lightweight drums and allowed to solidify. When the manufacturer is ready to make his solution, these drums are hacked open and torn away from the cake. Caustic potash is so extremely soluble that there is no difficulty in getting it into solution. One or two manufacturers maintain that they do not get as good a soap when they use liquid potash, and insist on making up their own lyes from the solid form. The cost of the solid cake in this form is less than in flake form, usually by about ¾ of a cent a pound. This may not seem like much of a saving but if the price of the flakes or an equivalent amount in solution is 7¼ cents a pound this is 11 per cent more than the price of the solid cake at 6½ cents a pound.

Both solid and liquid forms of potash are originally contaminated with potassium carbonate and potassium chloride, and sometimes with alumina, iron, silica, and sulfates. Most of the 10 per cent impurities in the solid is water. Solutions of caustic potash, like caustic soda, if exposed to the air will react with carbon dioxide to form carbonate. Solid caustic potash, also like caustic soda, is hygroscopic and absorbs moisture from the atmosphere. The moist surface of the solid is a solution which absorbs carbon dioxide from the air, forming potassium carbonate. For this reason caustic potash should always be protected as far as possible from contact with the air. The drums afford excellent protection to the solid before use. After the solution is made up it should always be kept covered. Impurities present in the form of aluminum and iron settle to the bottom as basic oxides. Potassium carbonate, although soluble in dilute solutions of caustic potash, is insoluble in the concentrated solution of 30-50°Be. used by the soap manufacturer, so that carbonate contamination likewise settles to the bottom of the tank as a sludge, representing just that much loss of caustic potash.

The third raw material required is soft water. Where the size of the plant warrants it, a regular Zeolite water-softening installation is satisfactory. A method suitable for small-scale use is the addition of sodium pyrophosphate, which can be added in solution when the soap base is diluted. A manufacturer who is lucky enough to have soft water on tap, water of 2-3 degrees of hardness or 34-51 parts per million, adds 4 pounds of pyrophosphate for an original 3,000-pound batch of soap. A small excess of pyrophosphate will do no harm but more than that should be avoided as the sodium-ion concentration of the latter must be kept low because of its relative insolubility.

Some manufacturers purposely add 1-2 per cent of a sodium salt such as sodium chloride, since the sodium soap formed makes the liquid more viscous, giving it the appearance of a more highly concentrated soap solution. If the manufacturer wants to thicken his product without increasing the soap content, it would seem more expedient to replace part of his caustic potash with caustic soda, since the former costs nearly three times as much as the latter. Some manufacturers replace up to 20 per cent of potash with caustic soda, but whether this can be done

[1] Federal Trade Commission. Monthly Summary of Work for July, 1940. August 20, 1940.

by the average manufacturer with a dispenser liquid without trouble from turbidity and clogging of dispersers is highly questionable. In any event, considerable caustic soad is required before an increase in viscosity becomes apparent. It would seem better in general, not to try to increase the viscosity of dispenser soaps since fluidity is an advantage rather than a disadvantage. While on the subject of caustic it might be mentioned that some soapers believe that 2 per cent of caustic soda with the caustic potash increases resistance to rancidity.

Numerous formulas for liquid soap manufacture are used, but it is a general rule that the simpler the formula, the easier it is to handle and the better the product. Some manufacturers use odd combinations and include oils which have no place in a liquid toilet soap. For example, soya bean oil is inexpensive, but is not recommended for liquid soaps as it is apt to have a high protein content. These albuminous materials do not precipitate out during soap manufacture and are not filtered out, but remain to give trouble in the finished soap. Linseed oil is used in some products, particularly some U.S.P. items. This mostly is because it has a historical background with the medical profession rather than any particular virtues as a soap oil. In addition, both linseed and soya bean oils give soaps which have a strong tendency toward rancidity.

The wide use of straight coconut oil for liquid toilet soaps did not grow out of anything except the adaptability of the oil for the purpose. Manufacturers use it because it gives them the type of soap which is required and demanded. Two combinations of coconut oil-potash soaps are offered for consideration and discussion, as follows:

Coconut oil	1000 lb.
Caustic potash, 88-90..	255 lb.
Water, to make.....	650 gal.

Calculation shows that this formula will produce a liquid soap containing about 20 per cent of anhydrous soap.

Another formula for a straight potash coconut-oil soap is:

	Parts by weight
Coconut oil	130
Caustic potash, 28°Be.....	135
Water	150

This latter produces a liquid with a content of 35 per cent of anhydrous soap[2]. The total volume will be 48½ gallons.

[2] E. G. Thomssen and C. R. Kemp. *Modern Soap Making*, 1937.

To Work Out a Soap Formula

IF the soapmaker knows the saponification number of the oil or the oil blend that he is going to use, he can devise his own formula. As an example, a formula for a straight potash coconut-oil soap with a content of 40 per cent of anhydrous soap is worked out, based on 1,000 pounds of coconut oil as a convenient round number easily converted into fractions or multiples, according to size of the batch chosen by the individual manufacturer. By definition, the saponification value of an oil or fat is the number of milligrams of caustic potash required to saponify 1 gram of the oil or fat. In other terms, it is the number of pounds of 100 per cent caustic potash required to saponify completely 1,000 pounds of oil. The handbooks give a range of 254-262 or sometimes a wider range for the saponification number of coconut oil, so that 260 would appear to be a fair figure.

As a start we therefore have 1,000 pounds of coconut oil reacting with 260 pounds of caustic potash to give 1,260 pounds of soap plus glycerine. In order to know the amount of anhydrous soap produced we must subtract the weight of glycerine produced. The amount of glycerine can be calculated from the weight of potash, using molecular weights; three molecular weights of caustic potash give one molecular weight of glycerine, or

$$\frac{\text{sap. no.} \begin{cases}\text{mol. wt.}\\ \text{glycerine}\end{cases}}{3 \times 56} = 142 \text{ lb.} = \text{the amount}$$

$$\frac{260 \times 92}{3 \times 56} = 142 \text{ lb.} = \text{the amount}$$

mol. wt. KOH

of glycerine formed from 260 pounds of potash or from 1,000 pounds of coconut oil.

Applying the same method of calculation to corn oil, which has a saponification number of 190, the amount of glycerine produced from 1,000 pounds of oil would be:

$$\frac{190 \times 92}{3 \times 56} = 104 \text{ lb.} = \text{the amount}$$

of glycerine formed from 190 pounds of potash or from 1,000 pounds of corn oil. If a mixture of 75 per cent coconut and 25 per cent corn oil were used, this would give:

$260 \times 0.75 = 195$
$190 \times 0.25 = 48.5$

243.5 sap. no. of mixture.

$$\frac{243.5 \times 92}{3 \times 56} = 133 \text{ lb.} = \text{the amount}$$

of glycerine formed from 243.5 lb. of potash or from 1,000 lb. of a mixture of 75 per cent coconut oil and 25 per cent corn oil.

To go on with our straight potash coconut-oil soap, knowing the amount of glycerine produced from the oil, we get the figure by subtraction for the amount of actual anhydrous soap produced:

1260 lb. anhydrous soap plus glycerine
142 lb. glycerine

1118 lb. anhydrous soap from 1000 lb. of coconut oil.

From this the total weight of 40 per cent liquid soap is calculated by the proportion:

$$1118 : x = 40 : 100$$

$$x = \frac{1118 \times 100}{40} = 2800 \text{ lb. of liquid soap with a content of 40 per cent anhydrous soap.}$$

The volume of this yield can be calculated if we know the specific gravity of the soap. Figures obtained in the laboratory for straight potash coconut-oil soap are:

Anhydrous Soap	*Specific Gravity*
10%	1.01
20%	1.02
35%	1.03
40%	1.04

Since the weight of water is 8.3 pounds per gallon, it is only neces-

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The Trend in SHAVE PRODUCTS

BRUSHLESS shaving creams continue to gain in popularity, year after year, while shaving sticks, cakes and soap creams continue to lose ground in the contest for popular favor. The continuance of these two approximately compensating trends is one of the main findings in a survey of the market for shaving products recently concluded by representatives of *Soap and Sanitary Chemicals* in a series of interviews with shaving soap manufacturers, jobbers and retailers. In certain sections of the country the trend toward brushless shaves is more apparent than in others, but every indication seems to point toward a continuation of increase in the popularity of the brushless variety. In spite of this narrowing of the gap, however, the regular shaving creams, speaking generally, still outsell the brushless almost two to one on a rough national average, according to figures compiled in surveys in cities from coast to coast. Other types of shaving preparations, —cakes, sticks, powders, liquids, etc., remain at a low level of consumer acceptance and are, if anything, continuing to lose ground. In the northeastern part of the United States, the rise in popularity of the brushless type of shave cream has been most pronounced in the past few years. And in some cities in this area, brushless creams are larger volume sellers than the lathering type. In the conservative South and West, soap creams continue to be preferred in the ratio of approximately five to two over brushless creams, although even here we find the latter type slowly, but steadily, gaining an increasing share of the market.

These trends were noted after study of available data; yet it must not be supposed that they are without exception. Speaking broadly, however, they indicate the changing picture of customer preference in the field of shaving creams today.

Latest U. S. census figures show a sharp increase in production of soapless shaving creams, the value of 1939 output reaching $4,186,962 as compared with $1,854,219 in 1937. Paralleling this swing was a drop in production of shaving soaps from a value of $9,729,538 in 1937 to $8,429,262 in 1939. Thus brushless shave, which in 1937 was outsold by soap creams five to one, had cut this margin down to two to one by 1939.

Shaving preparations of types other than creams have been largely replaced by creams in all parts of the country. Shaving sticks, shaving soap in cakes and in bowls, once an essential part of every man's shaving equipment, are now more than ever relatively unimportant volume sellers as compared to shaving creams, except in parts of the South where they were more firmly entrenched and still sell almost as well as brushless creams, being used by perhaps 15 to 20 per cent of the male population. In the North and the East, in which region direct data was gathered, shaving creams were found to account for over 95 per cent of all sales in this group of products, while sticks and cakes have a very slow turnover. Practically all retail outlets in the group covered by the survey, drug stores, department stores, cosmetic shops, and novelty stores, carried one or two brands of shaving soaps in cake form. These items, it was reported by the retailers, are carried chiefly as a service to a certain few old customers. The demand for them is comparatively slight. The retailers were unanimous in stating that they carried only very small stocks of cakes and sticks, replacing their few items every time they sold the half dozen or so they had in stock. One drug store manager reported that on the particular day he was interviewed he had sold four cakes of shaving soap, — an unusually large quantity for him to sell in one day!

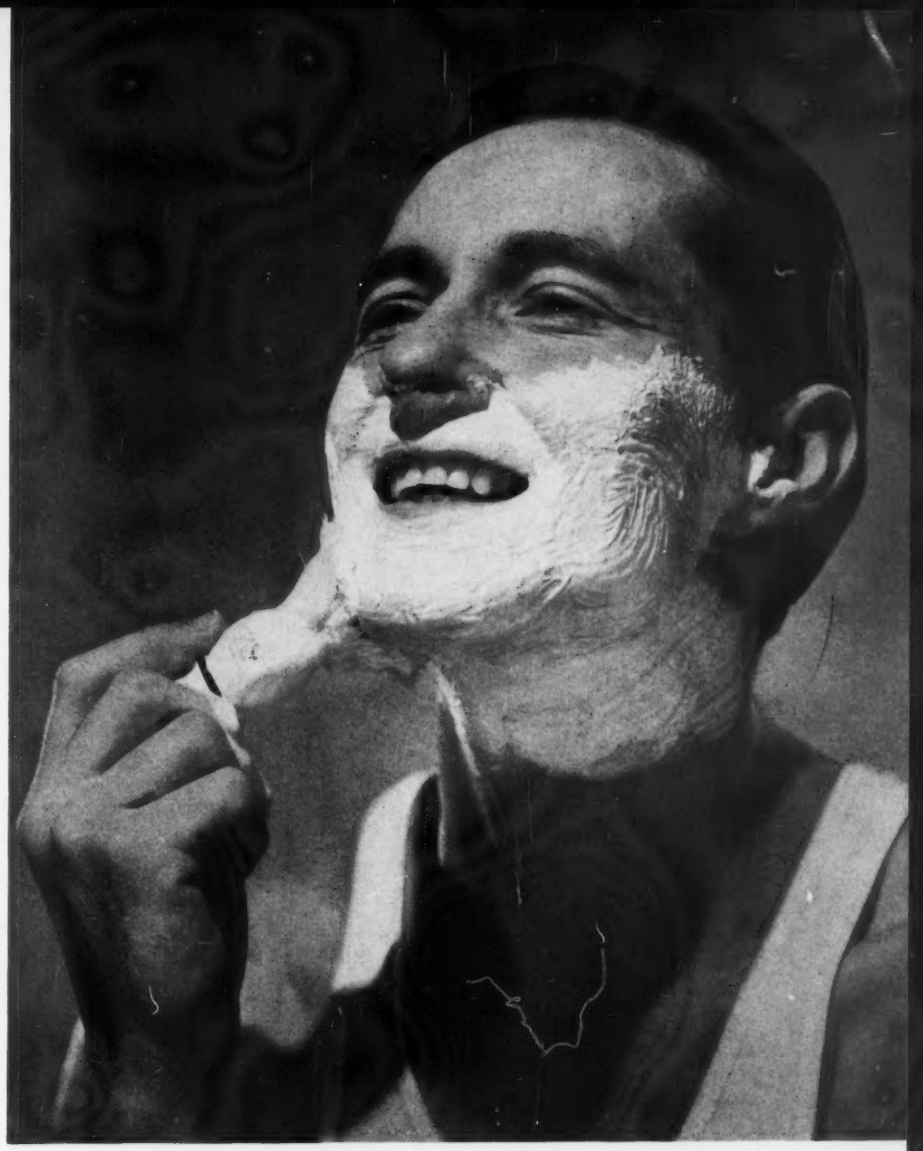
A similar situation was found to exist regarding the sales of shaving bowls. As the survey was conducted during the pre-Christmas season, the sales of shaving bowls were at their peak for the year, being in demand primarily as gifts in combination packages with after-shaving lotion and talc. With the exception of the pre-holiday season, most retailers reported, shaving bowls are slow, but fairly steady sellers. Repeat sales on these items were said to be few and far between since the shaving bowls last such a long time. A shaving bowl may last a user for from one to two years, and for this reason many retailers are not particularly interested in pushing this sort of business. They are much more inclined to feature products with a quick turnover, getting the customer back into the store in the shortest possible time. Among the brands of shaving bowls and also of shave soaps and shave sticks, it was found that a few companies dominate each field. The small volume of business represented by the solid type of prepara-

tion continues to be split up among a few large manufacturers.

Shaving powders, too, find a very small market apparently through the usual retail outlets for private consumption. The powders, along with other non-cream preparations, have lost their popularity to a pronounced degree. At the present time, they find their natural market in the barber shops, where they still seem to be preferred to any other type of preparation. One or two brands of shaving powder are stocked by most drug and department stores in the area covered by the survey and, here, also, a few companies dominate the field completely. When asked how many packages of shaving powder he sold per month, one druggist replied, "Well, I don't sell very much of it. There are a few oldtimers who come in here, old customers, and they won't take anything else. Same way with shaving bowls. The men who buy them are mostly men who have been using the same thing for years, since before shaving creams were put on the market, and they don't take to these new-fangled ideas."

Of some forty outlets for shaving products covered by interviewers, only two carried a liquid shave preparation. Both of these stores confessed they had not sold any bottles or *even had any inquiries* for this type of preparation for several years. Most druggists admitted they knew such a product existed and said they used to stock it several years ago. "It's a pretty good idea," said one retailer, "but nobody ever asks for it so I don't keep it in stock. I don't believe it's on the market any more." Actually, the product is still being manufactured and is still on the market. According to the manufacturer, the liquid shave product is not moving very fast in the East but is selling fairly well on the West Coast.

One shaving preparation which falls into none of the above-mentioned classes, was found in one lone store, a cosmetic shop. Enthusiastically endorsed by the manager, who said he used it himself, the product consists of a stick of a chalky white substance which is used in a rather unique manner. The accompanying directions read as follows: "Wet your face with water, hot or cold. Spread (not rub) a thin film of the block over your beard. Leave it on for one-half minute. Then wash it off completely and shave while face is still wet. The product is described by its manufacturers as "The Oxygen Shave" and is said to work on "oxygen-action" whereby oxygen is drawn to the hair bulb by capillary action and forms a film which is supposed to let the blade cut clean without dragging. A mysterious principle, indeed! The product is styptic and astringent and, it is reported, was introduced into the United States from Germany about a year ago. One block sells for 50 cents and is said to last for three months. It has not yet been advertised widely but the manufacturer has announced intentions of beginning to advertise nationally in the next few months, reports state.



Another type of "shaving" preparation with a limited distribution works as a depilatory. One of this class, which, incidentally, was recently the recipient of citation by the Federal Trade Commission, is sold in the form of a powder and contains as active ingredients barium sulfide and calcium hydroxide. Neither of these substances, needless to say, is harmless to the skin. Any depilatory which will remove the beard effectively will also remove part of the skin as well, since the outer skin and the hair are similar in composition and are at-

tacked and dissolved by the same chemicals.

MOST of the data gathered in interviewing retailers related, naturally enough, to shaving creams. As each retailer was visited, a series of questions were asked regarding the number of different brands carried, the number of brands in each class of shaving product, the size of his stock, which items are the most popular, which size of package is most popular and other pertinent questions.

A number of interesting facts were disclosed. Most striking was the observed difference in buying habits in country, suburban and city areas. The nearer the store was geographically to a large city, the more common it was for the retailer to state that the brushless creams were more popular in that vicinity than the regular creams. In country areas at some distance from a large city, lather-type creams seemed to reach their maximum popularity. As the interviewer approached the city, use of the brushless type shaving cream gained in favor and within the city itself, brushless creams were almost unanimously named as the most popular product, outselling the soap cream by about three to two. The more "citified" a community is, apparently, the more of a trend toward use of latherless creams may be expected. Conversely, in communities more remote from the city, people seem to be more conservative and less willing to switch from the older type of product in favor of innovations. The saving of time in shaving with brushless cream is probably another factor influencing the city dweller in favor of its use.

Little difference was noted in the variety of brands carried by the retailers interviewed. The number of brands ranged from as low as 15 to as high as 40 in each store, with an average of about 28 carried by the typical store. This typical outlet carried ten brands of brushless cream, ten brands of regular cream, three brands of shaving bowls, two of sticks, two of cakes and one brand of shaving powder. Stocks were preponderantly of the cream types. In every instance but one, the 50-cent size package, which retails at 37 or 39 cents, was named as the most popular sized package. The 10-cent package, not nearly as good a buy, sold very seldom, it was said, except to people about to take a short trip and who did not want to pack a large tube. In the 10-cent sizes, the brushless types were named as the best sellers in every case. Many people who use the regular type ordinarily, switch to brushless when on an overnight or week-end trip.

The most popular brands of regular shaving cream were found to be, in the order in which they were named most frequently: "Colgate," "Palmolive," "Williams" and "Mennen." The most popular brushless brands were: "Barbasol," "Palmolive," "Colgate," "Williams Glider" and "Molle."

When asked which brands he was most interested in selling, one independent druggist gave the following characteristic answer: "I always try to push well-known lather-type products backed by national advertising as I get a better turnover with these lines. I don't care about selling—(and he named a brushless product packed in a large jar) because I can't afford to compete with the cut-rate stores. If I tried to sell that product at the same prices those fellows get, I'd be losing money. I'd have to sell at 4 cents under the price I pay for it. The cut-rate stores can afford to take an actual loss on that item, using it as a "loss leader." They can write it off as advertising. Sure, I carry a few jars in case somebody asks for it, but they have to pay my price."

Referring to the practice of a few large companies of packaging two tubes in one carton, as a bargain selling at a price only a few cents higher than the price of single tube, he continued, "Those double packages don't do me any good. They're a bargain for the customer all right, but my profit is a lot less and then the customer gets all stocked up with shaving cream for another four months instead of two and it's twice as long before he has to come back again."

MOST retailers were of the opinion that the use of electric razors had not cut into their sales of shaving products to any appreciable degree. The consensus seemed to be that electric shavers reached their peak of popularity about a year ago on the crest of the wave when everybody was giving them away for Christmas presents. Some people, they report, who have tried electric shavers were unsatisfied with them and are switching back to safety razors and shaving creams. (This is an interesting observation but would have to be investigated much further to draw any broad conclusions.—Ed.)

The reasons behind a man's personal preference for one shaving preparation or another are as complex as they are various. What is considered a virtue and an advantage in one type of product by one man is often considered a fault by another. This is natural, of course, since beards vary in heaviness and skins in tenderness. The majority of men have extremely definite opinions as to the best procedure to use in the delicate operation of shaving, while a small minority say they can use anything at all and get good results.

The chief objection raised against brushless cream, mostly by soap cream users, is that it is too "messy." It sticks to the hands, they say, and you have to wash your hands before you can handle the razor; it clogs the razor so that you have to keep rinsing it out in order to get a good shave. That hot running water is necessary for getting satisfactory results, was also mentioned as an objection by people who do not always have hot water on hand. The manufacturers of brushless creams are doing their best to combat the sales resistance of people who object to the clogging feature. One company is currently conducting a campaign in

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1939 Soap Output Sets Record

The American soap industry produced more than three and one-half billion pounds of soaps of all kinds in 1939, according to figures released last month by the U. S. Bureau of the Census and reported in the December, 1940, issue of *Soap and Sanitary Chemicals*. With the value of the industry's 1939 output reaching above three hundred million dollars, new records for both tonnage and value were established. Detailed statistics on the types of products, as reported in the preliminary census report, are included in the accompanying table. Figures for 1939 are subject to correction.

[1] Revised; glycerin included in the Chemicals Not Elsewhere Classified industry for 1937.

[2] Rosin reported used in the manufacture of Soap and Glycerin amounted to 75,401,813 pounds in 1939 and 75,450,320 pounds in 1937.

[3] Produced by establishments classified in the Soap and Glycerin industry only. Cleansers and scouring powders containing no soap classified in the Cleaning and Polishing Preparations, Blackings, and Dressings industry.

[4] Shaving cream containing no soap is classified in the Perfumes, Cosmetics, and Other Toilet Preparations industry.

[5] Produced by establishments classified in the Soap and Glycerin industry only.

[6] The total production of crude glycerin, as reported to the Division of Cotton and Oils, Census Bureau, for 1939 was 184,476,395 pounds. Most of this was further refined and sold or used as glycerin, dynamite grade, or glycerin, chemically pure.

Canada Soap Volume Gains

In 1939, 110 Canadian factories making soaps, washing compounds or cleaning preparations as their main products produced a total volume valued at $20,145,072, according to a report from the Canadian Department of Trade and Commerce. This was 9.4 per cent greater than the output of $18,241,985 from the 109 establishments in this category in 1938.

Chicago Xmas Party

The Chicago Drug and Chemical Association staged its 38th annual Christmas stag party at the Hotel Morrison, Dec. 19. Some 350 members enjoyed the banquet and floor show arranged by the entertainment committee, whose chairman was John A. Scott, of Merck & Co., vice-president of the club. Christmas favors in the form of samples of products handled by the member organizations were distributed.

Products of Soap Industry by Kind, Quantity, and Value: 1939 and 1937

	1939	1937
1. Soap and Glycerin industry, all products, total value	$302,634,474	$301,291,547
2. Soap and glycerin	276,395,722	280,359,829
3. Other products (not classified in this industry)	26,238,752	20,931,718
4. Soap and glycerin made as secondary products in other industries, value	15,550,485	16,318,715
Soap and glycerin, aggregate value (sum of 2 and 4)	$291,946,207	[1]$296,678,544
Bar soap:		
Toilet soap:		
Pounds	405,083,669	360,610,753
Value	$64,919,683	$62,805,065
Laundry soap:		
White:		
Pounds	660,766,458	488,979,981
Value	$29,887,998	$28,192,491
Yellow:[2]		
Pounds	580,215,263	633,441,319
Value	$27,752,768	$33,195,616
Granulated, powdered, and sprayed soap:		
Pounds	894,727,289	743,194,783
Value	$75,631,820	$68,408,836
Soap chips and flakes:		
Packaged:		
Pounds	284,143,533	274,275,994
Value	$24,984,799	$28,207,372
Bulk:		
Pounds	135,071,434	116,179,494
Value	$9,582,030	$9,797,688
Washing powders:		
Packaged:		
Pounds	133,638,514	146,924,947
Value	$5,506,608	$6,582,021
Bulk:		
Pounds	114,703,458	85,486,294
Value	$3,331,965	$2,521,640
Cleansers and scouring powders cont. soaps:[3]		
Packaged:		
Pounds	167,441,482	157,039,241
Value	$6,948,037	$6,254,838
Bulk:		
Pounds	18,708,354	21,307,024
Value	$796,336	$917,323
Shaving soap, total value	$8,429,262	$9,729,538
Stick, powder, and cake:		
Pounds	5,678,803	5,075,521
Value	$2,196,964	$1,954,272
Cream (soap base):[4]		
Pounds	7,611,401	9,555,764
Value	$6,232,298	$7,775,266
Liquid soap, not inc. packaged shampoos:		
Pounds	39,163,707	29,869,959
Value	$3,339,735	$2,435,296
Soap stock or base, for sale as such:[5]		
Pounds	4,350,109	4,521,988
Value	$285,673	$346,947
Bar cleansers containing soap:[5]		
Pounds	4,953,566	5,446,732
Value	$303,202	$410,544
Hand paste or mechanics' paste:		
Pounds	18,747,809	16,930,579
Value	$1,060,979	$1,062,295
Textile soap, including potash and foots soap for textile manufacture:		
Pounds	63,671,392	60,707,640
Value	$5,013,616	$5,357,793
Potash soap, other than textile and liquid:		
Pounds	30,928,845	25,071,652
Value	$2,129,457	$2,156,599
Soap not reported according to classifications above, value	$3,559,607	$3,421,584
Glycerin:[6]		
Crude:		
Pounds (basis 80 per cent)	29,461,738	24,180,767
Value	$2,375,243	$3,592,537
Dynamite grade:		
Pounds	64,293,972	43,586,391
Value	$6,595,283	$7,822,600
Chemically pure:		
Pounds	90,484,348	78,813,063
Value	$9,512,106	$13,459,921

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DYES
DISODIUM PHOSPHATE
GLAUBER'S SALTS
GLYCERINE
METASILICATE
OXALIC ACID
POTASSIUM CARBONATE
SAL AMMONIAC
SALT
SAL SODA
SILICATE OF SODA
SODA ASH
TRISODIUM PHOSPHATE

CASTOR OIL
COCOANUT OIL
CORN OIL
COTTONSEED OIL
LARD OIL
NEATSFOOT OIL
OLEIC ACID - RED OIL
OLIVE OIL
OLIVE OIL FOOTS
PALM OIL
PALM KERNEL OIL
PEANUT OIL
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NEWS....

Peerless Soap to Build

Peerless Soap & Chemical Co., Detroit, has announced plans for a new factory building to be erected at Oakman Blvd. and Cloverdale Ave., that city.

P. & G. Introduce "Duz"

Procter & Gamble Co. introduced their new laundry soap product, "Duz" in a six-column test advertisement in Harrisburg, Pa., newspapers recently. It was described as "a soap for everything in your wash," and possessed also of "anti-sneeze" properties. Newspapers in eleven other cities are on the schedule for an expansion of the promotional campaign next spring.

Reducing Soap Complaint

Peggie Moran Co., Hollywood, Cal., and Irene Johnston, Inc., Los Angeles, engaged in the sale and distribution of a soap supposedly possessing reducing properties, were charged with misrepresentation of the product in a recent complaint by the Federal Trade Commission. The concerns cited, says the complaint, represented their product, "Peggy Moran Deluxus" (at $2.00 per bar) as a reducing soap and claimed that its application to the fatty portions of the body would cause one to become slender. These representations are misleading and deceptive, it is charged.

C-P-P Votes Extra Dividend

Colgate - Palmolive - Peet Co., Jersey City, N. J., recently declared a 50-cent extra dividend on the common stock, payable to holders of record December 12, 1940. A similar dividend was declared by the company in 1939.

Detroit Soaper Dies

George L. Edloff, Detroit soap manufacturer and distributor, died last month at his home. He was 79 years old. In his youth, Mr. Edlog worked as office boy for the late Thomas A. Edison in his New York laboratory. Fifty years ago he moved to Detroit to enter the soap business.

William L. Schultz, president of Shulton, Inc., New York, and Mrs. Enid Edson, designer of the "Early American Old Spice" and "Friendship's Garden" line of toiletries, below, joined with 850 other members of the Shulton organization at the company's third annual Christmas party which was held last month at the Hotel Astor in New York City.

National Aluminate Expands

National Aluminate Corp., 6221 West 66th Place, Chicago, is expanding plant facilities by erecting a second story on existing property, which will provide more than 16,000 square feet of space. Cost is placed at $50,000. The company manufactures water treating chemicals.

Soap Rationed in Denmark

Each citizen of Denmark may have one bar of soap per month and each male may have one stick of shaving soap, according to a new edict which became effective on December 30. The fat content of soap was officially decreased from 80 to 60 per cent and laundries were obliged to cut their soap consumption in half.

Emery Holds Xmas Party

John J. Emery, president of Emery Industries, Inc., Cincinnati, entertained over 250 employees and friends at a Christmas Party on December 23 in the Netherland-Plaza Hotel. All offices closed at noon. Featured on the program, following the holiday banquet, was a musical and dramatic skit depicting growth of the company since it was started one hundred years ago. Music and dancing followed.

Cuban Develops New Type Soap

Toilet soaps containing fruit juices and for which various beneficial attributes are claimed have recently been developed by a Cuban chemist, according to a report from the U. S. Department of Commerce. The distinctive characteristics of the soaps are said to be derived from the inclusion in them of fruit juices which are introduced by a special

The annual Christmas Party of the Chicago Perfumery, Soap and Extract Association was held December 7th in the Terrace Room of the Morrison Hotel. Dinner, dancing and floor show were enjoyed by the record crowd of almost 700 that attended. In place of the souvenir bag which has been given to the ladies in the past, a cosmetic kit was presented. Arrangements were handled by a committee headed by R. L. Holland and J. D. Small.

process. A lemon or lime juice soap is said to have improved detergent properties and to remove stains and bleach the skin. A papaya juice soap is supposed to soften the skin. A soap containing the juice of piña de raton, a native Cuban fruit, is said to have astringent properties. A seaweed soap manufactured from marine algae is claimed to impart a velvety texture to the skin and a soap made from oil of the avocado is recommended by the originator for softening dry skin.

Beauty Counselors Move

Beauty Counselors, Inc., Detroit, have recently moved to new quarters in Grosse Pointe Park. The offices were formerly located in the Penobscot Building.

P. & G. Announces Bonus

A three per cent bonus aggregating $500,000 will be paid to 12,000 employees of Procter & Gamble Co., Cincinnati, the directors of the company announced recently. All regular employees in employ of the company prior to July 1, 1940, whose wages or salaries do not exceed $3,000 a year, and who are on the payroll in good standing will receive a bonus in cash equal to three per cent of their net wages for the year 1940. The payments are to be made exclusive of the company's profit sharing plan, it is said.

Colgate Agency Named

Ward Wheelock Co., New York advertising agency, has been named by Colgate - Palmolive - Peet Co., Jersey City, N. J., to handle the "Palmolive" soap account, thus completing its re-alignment of agencies. Other portions of the account were previously placed with Sherman & Marquette, Inc., Chicago, and Ted Bates, Inc., New York.

Change Silicate Name

Cowles Detergent Co., Cleveland, recently changed the name of its pentahydrate sodium metasilicate from "Escomet" to "Crystamet." The grade, price and package remains the same as before, it is said. "Crystamet" being available in two grinds, regular and 1460 (through 14 mesh, retained on 60 mesh), both priced the same.

Smith Co. At New Address

S. A. Smith & Co., New York, soap products, are now located at 321 West 11th St. The company's office was formerly at 411 Bleecker St.

Holmes Elected A.C.S. '42 Head

Dr. Harry N. Holmes, head of the department of chemistry at Oberlin College, was recently elected president of the American Chemical Society for 1942. Dr. Holmes became president-elect on January 1, 1941, at which time William L. Evans, head of the department of chemistry at Ohio State University, became president. Dr. Willard H. Dow, president of Dow Chemical Co., Midland, Mich., has been re-elected director.

Toilet Goods Census Totals

Production figures showing the value of shampoos, shaving creams and dentifrices produced by the American toilet goods industries during 1939 as compared with 1937, recently released by the U. S. Bureau of the Census, show significant trends in these items. Production of soapless shaving cream rose impressively from a value of $1,854,219, in 1937, to $4,186,962, in 1939. Shampoos containing soap showed production increases, the 1937 value of $3,556,419 rising to $4,578,207 in 1939. The output of soapless shampoos decreased in value, 1939 production dropping to $1,192,802 as compared with the 1937 total of $1,982,305. The value of dentifrice production in 1939 dropped sharply, falling from $35,559,134 in 1937 to $28,410,015 in 1939.

Columbia Alkali Sales Change

The sale of chemicals manufactured by Pittsburgh Plate Glass Co., Pittsburgh, is now being handled directly by its Columbia Chemical Division rather than through its sales subsidiary, Columbia Alkali Corp. whose operations have been discontinued. This change, which became effective December 1, does not affect the personnel or the headquarters of the Columbia sales executives or the sales organization. Existing contracts of the Columbia Alkali Corp. and existing distributor relationships were taken over without change by the Columbia Chemical Division.

Foragers Elect Officers

H. T. Georgi, of Houbigant, Inc., was elected president of the Foragers of America for the years 1941-42 at the annual meeting of the club, December 27. Other officers elected at the same time are as follows: vice-president, Walter A. Conklin, of Helfrich Laboratories of N. Y., Inc.; secretary-treasurer, A. J. Connolly, of Ritchie & Janvier, Inc.; board of governors, Frank L. Graham, of De Vilbiss Co.; J. A. Curry, of Oglivie Sisters Salons, Inc.; George Dermody, of Hudnut Sales Co.; W. W. Neilson, of Fritchie & Janvier, Inc.; T. M. Hanlon, of Caron Corp.; and J. J. Franz, of Thomas Leeming & Co.

The annual banquet of the Foragers of America is to be held January 11 at Midston House, New York. Robert Crawford, of American Hard Rubber Co., one of the oldest Foragers, will be guest of honor.

Owens Can Builds in Chicago

Owens-Illinois Can Co. expects to start work early this year on a new $300,000 warehouse adjoining its Chicago plant at 6501 West 65th St., in the Clearing Industrial District. Plans call for a three-story structure covering a ground plot of 160 x 360 feet.

Soap Association To Meet

All soapmakers are invited to the fourteenth annual meting of the Association of American Soap & Glycerine Producers to be held at the Waldorf-Astoria Hotel, New York, January 10. Reports on the work of the Association will be given and 15 directors will be elected. Meeting will be called to order at 1:45 P.M.

DCAT Dinner March 13th

The sixteenth annual banquet sponsored by the drug, chemical and allied trades section of the New York Board of Trade will be held March 13, at the Waldorf-Astoria, New York. Rudolph F. Berls, of McKesson & Robbins, Inc., has been appointed chairman of the reception committee and Victor E. Williams, of Monsanto Chemical Co., vice-chairman. Publicity is under the direction of Ira P. MacNair of MacNair-Dorland Co., chairman, and Thomas R. Farrell, *Drug & Cosmetic Industry*, vice-chairman of the committee.

To Sell for Cowles in Ohio

Innis, Speiden & Co., New York, have recently been appointed as Ohio distributors of the powdered silicate products of Cowles Detergent Co., Cleveland. Don Cushman is Cleveland manager for Innis, Speiden & Co.

Plan Shulton 1941 Advertising

During the first half of 1941, Shulton, Inc., New York, will advertise in 19 national magazines with a combined circulation of 30,000,000 readers, it was announced recently.

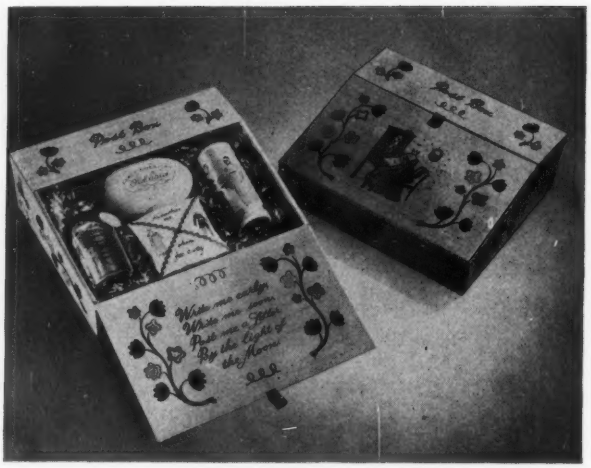
P. & G. To Make Munitions

The Procter & Gamble Defense Corp. has just been incorporated at Columbus, Ohio, with R. R. Deupree as president and other P. & G. officials as executives, to manufacture armaments and munitions for the defense of the United States. Incorporation was followed on December 24 by an application filed in Knoxville, Tenn., indicating that a munitions plant will be constructed there. The new company will be capitalized at $1,000,000. Besides R. R. Deupree, who will act as president of the new company, other officers will be as follows: vice-presidents—Floyd M. Barnes, Harvey C. Knowles, Morton P. Woodward and Robert A. Duncan; secretary—H. Truxton Emerson; treasurer—Walter H. Tuttle; assistant treasurers — George S. Woodward, Jr. and Ronald D. Francis. All are associated with Procter & Gamble Co.

Announcement at the P. & G. office said: "The company, at the request of the War Department, has agreed to undertake certain work in the defense program, having to do with mass production of munitions. We will have no material profit or financial interest in the project, and it will have no connection with our regular business or the operation of our plants. Activities will be carried on at points to be selected by the War Department, and to the best of our knowledge Cincinnati will NOT be included. We are placing at the disposal of the government our knowledge and experience in plant construction and operation where mass production is concerned. It has a remote connection with our business, but only in a mechanical way, as our new materials and by-products are in no way involved. Our remuneration will cover the cost of executive personnel necessary to carry out the task assigned us."

New Products and Packages

New plastic dispenser sold in a combination deal with two packages of lemon-scented "Crest-Ex" cleanser is being distributed by R. W. Barnes & Co., Chicago. The dispenser made in a variety of colors is molded by Chicago Die Mold Mfg. Co. Fibre can by Sefton.



The "Early American Old Spice Post Box," by Shulton, Inc., New York, contains toilet water, toilet soap, talcum and a sachet, and retails for $1.00. This newest addition to the "Old Spice" line is designed to be used as a box for note paper after the contents have been consumed.

New one-, two- and five-pound carboard cartons for "Pax" granulated hand-soap recently introduced by G. H. Packwood Manufacturing Co., St. Louis, are designed to replace drums and barrels for easier handling. The cartons also save storage space.

Drug Wage Hearing Jan. 29

Minimum wages for workers in the drug, medicine and toilet preparations industry will be under consideration at a meeting in Washington, January 29, called by Philip B. Fleming, Administrator of the Wage and Hour Division, U. S. Department of Labor. Sumner S. Schlichter, economist, of Harvard University, heads a committee of eighteen that has been appointed to work out minimum wage recommendations for the industry. The definition of the industry specifically excludes "the manufacture or packaging of shaving cream, shampoo, essential (volatile) oils, glycerine, and soap, or the milling or packaging without further processing of crude botanical drugs."

The Committee is equally representative of the public, the employers and the employees. Employer members are James M. Buck, Jr., Plough, Inc., Memphis; M. C. Eaton, Norwich Pharmacal Co., Norwich; Alvin G. Brush, American Home Products Corp., New York; Paul Vallee, Roger & Gallet, New York; Edward Beardsley, Miles Laboratories, Elkhart, Indiana; and George R. Flint, Flint, Eaton & Co., Decatur, Illinois.

Expand N. J. Soap Plant

The soap factory at the Essex County Hospital, Cedar Grove, N. J. which manufactures soaps for various New Jersey state hospitals and other institutions is being expanded and modernized. The new plant will have a capacity of six thousand pounds of soap weekly. Regular laundry and white floating soaps will be manufactured as well as a few soap specialties in the modernized plant.

Fat Producers Elect Buxton

A. L. Buxton of Kentucky Chemical Co., Cincinnati, was elected president of the Association of American Producers of Domestic Inedible Fats at the fifth annual convention in Chicago December 10. Don Pfieffer of Akron Soap Co., Akron, O., was elected vice-president and W. S. Wood, Alexandria, Va., is the new secretary. New members of the board of directors include Alvin Ziegler, Harry Theobald and Rae Walters. Reports of retiring officers and informal discussions of taxation, wage-hour matters and problems of the small business man featured the meeting program. Of special interest was an outlined presentation of the national situation affecting the industry including Philippine competition and the looming threat to the domestic oil and fats market from surplus South American stocks.

Bonuses for Canadian C-P-P

Colgate-Palmolive-Peet Co. of Canada gave Christmas bonuses of one week's salary to all employees who have been a year or more in the firm's employ. All employees who were on the company's payroll at the beginning of the war and who have since enlisted, also received the bonus. The employees were already getting a special cost of living allowance.

Gillam Receives Defense Order

Gillam Soap Works, Fort Worth, Texas, recently announced receipt of a new order for 410,000 pounds of soap to be shipped to military establishments in Texas and five other southwestern states. The Gillam soap order calls for 40,000 pounds of powdered soap and soap chips to be shipped to Ft. Sam Houston, 160,000 pounds to Ft. Sill, Okla., and 210,000 pounds to other forts in the area.

Donates Rare Print

H. Dresel, Felton Chemical Co., Brooklyn, recently donated an elaborate and valuable copy of the Magna Charta to the War Relief Committee of the American Red Cross for Aid to Great Britain. The collector's item which was printed in London in 1812, was sold by the committee at auction.

Maurice Joins Packwood Sales

H. C. Maurice, formerly associated with the Retail Credit Association of Pittsburgh, has just become manager of sales for the Pittsburgh office of G. H. Packwood Manufacturing Co.

Curtail Canadian Soap Imports

Imports of soaps into Canada from non-sterling countries were restricted sharply as a result of a proposal recently adopted by the Canadian Parliament. The following items are included in the restricted list of articles: soap powders, powdered soap, mineral soap, and other types of soap; perfumes, tooth and skin washes; tooth powders, and all perfume preparations used for the hair, mouth or skin. Another schedule reduces the duty on soaps imported into Canada from the United Kingdom or sterling countries from 20 per cent to 10 per cent.

Offers "De Luxe" Cleaner

Diversey Corp., Chicago, has added to its line of some twenty-four cleaning compounds a new "De Luxe" cleaning powder, which it is claimed, has unique wetting action which improves cleaning results because of ability to wet greasy surfaces. Unusual water-softening properties are also said to give practically clear solutions even in hard water. The product is being marketed through field representatives to food processing plants.

Jones To Swift Board

Directors of Swift & Co., Chicago, have set Jan. 16 as the date of the annual meeting, at which time approval will be sought of the Board's recent action in increasing the number of directors from nine to eleven. O. E. Jones, vice-president, with jurisdiction over the soap and other departments, has been placed in nomination for election to one of the two new seats on the enlarged directorate.

Bradley Offers New Cleaner

Bradley Washfountain Co., Milwaukee, Wis., has announced a new washroom cleaning agent, for use on the company's fixtures and other washroom facilities. The cleaner is described as containing a new synthetic, soapless detergent and is said to retain its effectiveness in hard water. It is marketed in cartons of 10, 25, 50 and 100 pounds.

WE MAKE IT CLEAR

Low in salt, low in iron, low in turbidity, Warner Caustic Soda gives excellent results wherever a high-quality caustic soda is required. Yet for all its high-quality and crystal clarity, Warner Caustic Soda costs no more than regular production-grade electrolytic caustic soda.

Warner Caustic Soda is furnished in standard 50% and 70% concentrations — as well as in 73% concentration shipped in specially lined tank cars. Also flake or solid. Why not order a car for prompt shipment?

WE INVITE INQUIRIES ON WARNER CAUSTIC SODA AND WARNER TETRA SODIUM PYROPHOSPHATE

Acid Sodium Pyrophosphate	Trichlorethylene	Blanc Fixe
Phosphoric Acid	Barium Carbonate	Carbon Tetrachloride
Sodium Phosphates	Perchlorethylene	Epsom Salt
Liquid Caustic Potash	Carbon Bisulfide	Hydrogen Peroxide
Chlorine, Liquid	Sodium Sulfide	Alumina Hydrate, Light
Sulfur Chloride	Bromine	Chemical Grade Magnesia

CHEMICAL **WARNER** COMPANY

DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

First Chicago Chemical Exposition, Dec. 11-13, Viewed by 40,000

MANUFACTURERS of chemicals and machinery used by the soap and sanitary chemical industries were well represented in the first National Chemical Exposition staged in Chicago Dec. 11 to 15. The huge exposition was sponsored by the Chicago section of the American Chemical Society, with Dr. R. C. Newton, chief chemist of Swift & Co., as general chairman. Approximately 40,000 persons viewed the exhibits at the Stevens Hotel which effectively spot-lighted the part applied chemistry is playing in human progress.

Among outstanding exhibitors the following were noted:

VICTOR CHEMICAL WORKS, Chicago: An animated display emphasizing the role of tetrasodium pyrophosphate as a soap improver and portraying, also, contributions made by new derivatives of phosphoric acid to a wide range of industrial products. Miniature models of the company's three plants, at Chicago Heights, Ill., Nashville and Mt. Pleasant, Tenn., and colored transparencies showing applications of Victor products ornamented the attractively lighted booth. H. B. Hobbs, Chicago, in charge.

ASSOCIATION OF AMERICAN SOAP AND GLYCERINE PRODUCERS, New York: "Glycerine, the Product of a Thousand Uses." was the theme of the exhibit whose colorful backdrop utilized miniature three-dimension models to suggest the widespread market developed for this soap by-product. Dr. G. Leffingwell, editor of the Association's publications, supervised the presentation.

ARMOUR & Co., Chicago: A display of "Neo-fats" and fatty acid derivatives. Representatives answered questions regarding properties of these new drying oils and the possibilities for their use in soaps, cosmetics, shaving cream and other commodities. A photographic cut-out portrayed the new type of still for fractional distillation of the fatty acids, while pictures of other new apparatus required for the process were also displayed. E. W. Wilson, assistant manager of Armour Auxiliaries, Dale V. Stingley and others of the research staff were present.

REILLY TAR & CHEMICAL CORP., Indianapolis: A display of coal-tar chemicals used in manufacture of insecticides, fungicides, disinfectants, moth repellants, perfumes and other materials. Some twelve new derivatives, not previously offered commercially, were given premier showing here. Wm. Higburg, general manager, Indianapolis, in charge.

NEWPORT INDUSTRIES, New York; Dr. E. V. Romaine in charge, showing chemicals derived from turpentine, including two new products, "Para Cymene" and "Para Menthane," of interest to soap makers.

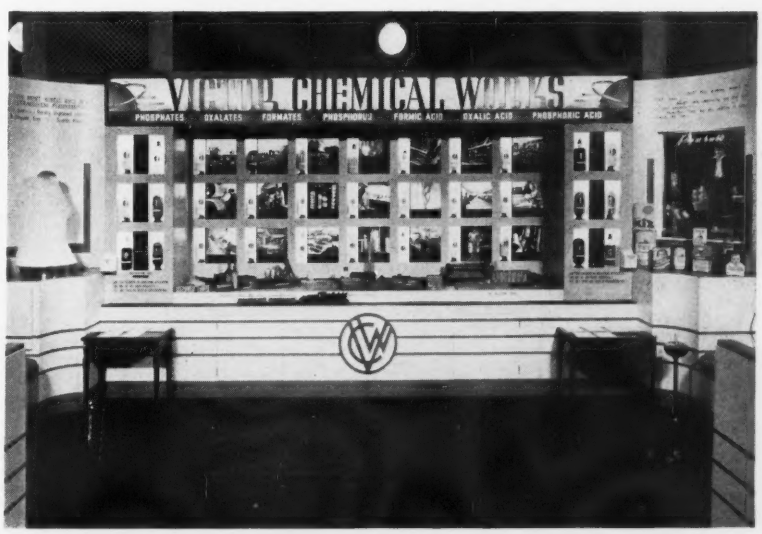
AMERICAN LECITHIN Co., New York, represented by Ross & Rowe, Inc., sales agents, showed a display of commercial lecithin. W. K. Hilty, New York, and James Lynch, Chicago, explained the emulsifying properties of lecithin which make it of value in soap manufacture and its alkali neutralizing effect.

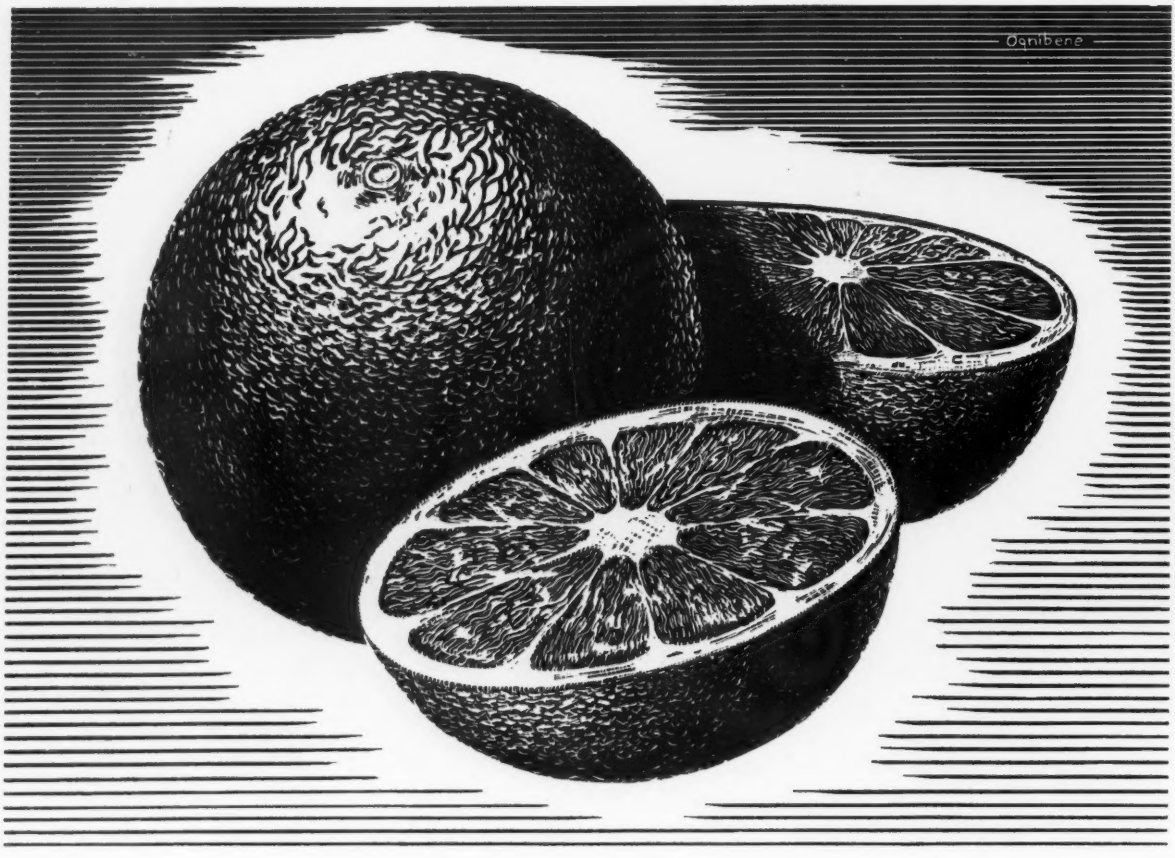
DOW CHEMICAL Co., Midland, Mich.: Novel decorations of modernistic design, made from the company's varied plastic products featured the Dow display, which included also an exhibit of the complete line of industrial chemicals, insecticides, fungicides, aromatic chemicals, deodorants, cleaning solvents, waxes and other items.

MERCK & Co., Rahway, N. J., emphasized their research program in medical and nutritional chemistry but a portion of the exhibit stressed the use of Merck chemicals in industry, with special attention to fine reagent chemicals for laboratory use in testing raw and finished products.

HERCULES POWDER Co., Wilmington: Display of products including pine oil terpene solvents, ethyl cellulose and other new materials recently developed.

COMMERCIAL SOLVENTS CORP., Terra Haute, Ind., centered their display on four new nitro-paraffins and twelve derivatives, made commercially for the first time in 1940. Of the derivatives a group of five amino-hydroxy compounds producing higher fatty acid soaps are of special interest, a representative explained. They are proving, he said, to be ex-





Enriched by Good Earth

The better the earth, the better the crop. It is the same with manufactured products, too. Niagara is helping many manufacturers improve the quality of their finished goods by supplying them with the "good earth" of carefully produced basic materials — Caustic Potash, Caustic Soda, and Carbonate of Potash. Give your products the benefit of the skill and experience that goes into the making of these Niagara materials.

Niagara ALKALI COMPANY

60 EAST 42nd STREET, NEW YORK, N. Y.

Affiliated with Electro Bleaching Gas Company, Pioneer Manufacturer of Liquid Chlorine

PARA
CAUSTIC SODA
CARBONATE OF POTASH
CAUSTIC POTASH

cellent emulsifying agents for oils, fats and waxes, and finding application in such products as water-resistant self-polishing floor waxes and non-yellowing cosmetic creams and ointments.

KOPPERS CO., Tar & Chemical division, Pittsburgh: Presenting 24 new chemical products derived from coal and a demonstration of their fluorescent properties by use of ultraviolet light.

HARSHAW CHEMICAL CO., Cleveland: Displaying ten new products; SKELLY OIL CO., with a display of petroleum products and derivatives; The DICALITE CO., Chicago, with a display of "Dicalite Filteraids" and other products; and innumerable other manufacturers of chemicals were also among the exhibitors.

Machinery manufacturers occupied 40 per cent of the available space in the Stevens Exposition Hall and suppliers of laboratory apparatus took up 25 per cent of the space. Among products shown were testing, recording and controlling instruments, glassware, filters, clarifiers, sifters, pulverizers, mixers, tanks, water stills, lift trucks, shipping containers and other items.

Speakers at the various sessions of the conference on industrial chemistry stressed new developments in synthetic chemicals and materials and their effect on various commercial products; the influence of new processes and materials on the chemical industries and the service of chemistry in different fields.

Lever Employees Aid Britain

A $50,000 gift from Lever Brothers Co., Cambridge, Mass., has been turned over to the British Soldiers', Sailors' and Airmen's Families Association. The fund was accumulated by donations from employees and officials.

Roger & Gallet Move

Roger & Gallet, Inc., is now located in its new and enlarged plant at 337 W. 27th St., New York. A showroom will be continued at 500 Fifth Avenue.

M. M. & R. Sales Meeting

A general annual sales convention was held by Magnus, Mabee & Reynard, Inc., at the Hotel Warwick, New York, on January 3, 4, 5, and 6. Representatives of the company from every state as well as from Canada, Mexico and Cuba, a total of approximately 75, attended the conclave to lay plans for 1941. The four-day sessions of the meeting included numerous speakers both from within and outside of the MM&R organization, the program comprising addresses and discussions on both technical and commercial subjects, particularly many new technical advances in the application of essential oils and aromatic products.

PERCY C. MAGNUS

The meeting was under the general direction of A. H. Downey, technical director of MM&R, who was assisted by a committee including J. B. Magnus, vice-president, Wm. F. Fischer, sales Manager, R. C. Ringgold, asst. to president, Geo. H. McGlynn, treasurer, M. Stanley Barker, New York, field representative, and Sidney Matthew Weiss, MM&R adviser on advertising and sales promotion.

In speaking before the meeting, P. C. Magnus, president of the company, and former president of the New York Board of Trade, stated that 1940 had been the largest year in the history of the company. Regarding 1941, Mr. Magnus said: "I believe sincerely that 1941 will show a tremendous business upsurge. Barring involvement in the present conflict, we can look forward to what may be the greatest year of business this country has ever experienced. As for MM&R, we are concluding our biggest year in almost 50 years of operation. I anticipate a substantial gain in 1941."

New Synthetic Glycerin Process

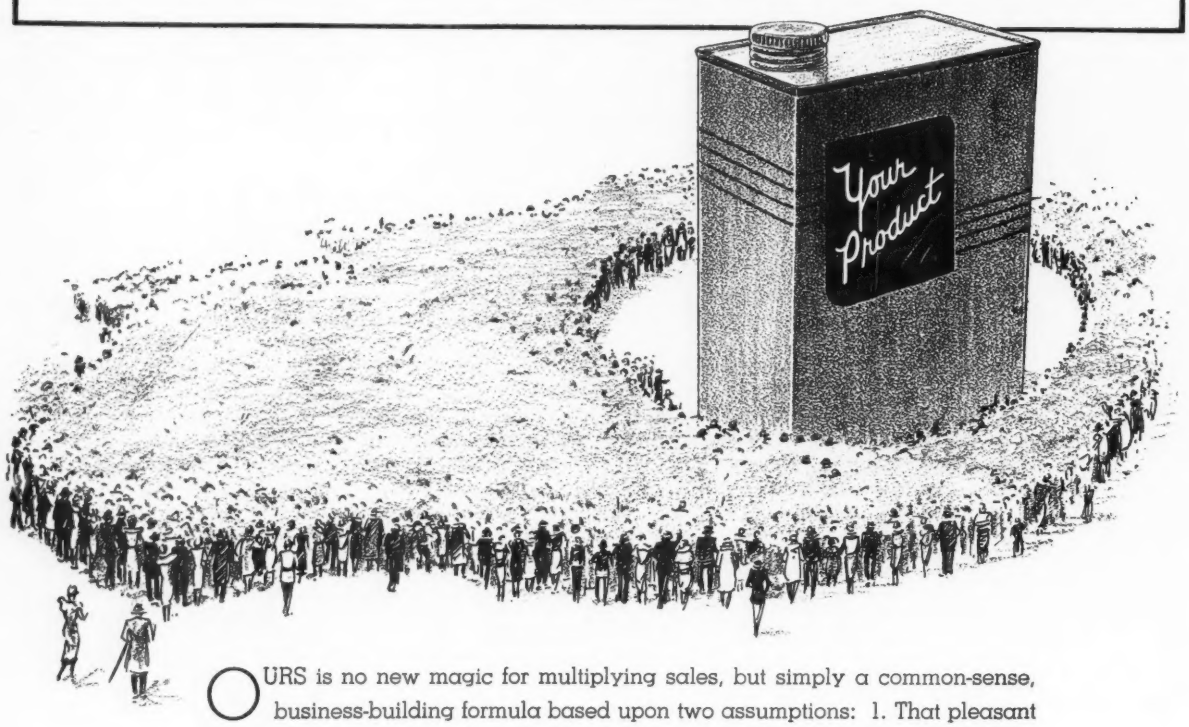
A new process for producing glycerin synthetically from petroleum which is said to be commercially practical was outlined recently by Dr. E. C. Williams, research director for Shell Development Co., in a talk before the convention of the American Institute of Chemical Engineers held in New Orleans in December. Dr. Williams announced that his company is already operating a semi-commercial plant at Emeryville, Cal., for making glycerin by the new process. As described by the speaker, the steps in the process are essentially as follows: (1) the isolation of propylene from petroleum; (2) the reaction of propylene with chlorine gas to form allyl chloride; (3) the reaction of allyl chloride with caustic soda to form allyl alcohol; and (4) the conversion of allyl alcohol to glycerin. An alternate synthesis may be used, it was said, in which step (3) is replaced with the formation of glycerin chlorohydria instead of allyl alcohol.

It was not disclosed how soon Shell might build a commercial plant but it was indicated that if present supplies of glycerin should become insufficient, the new source would be tapped. A continuation of the present rapid increase in production of alkyd resins and cellophane might bring about that result, it was predicted, as well as a possible increase in the use of glycerin in wartime explosives.

DeLorme of Riviera Dies

Joseph DeLorme, Riviera Products Co., essential oils, Chicago, died recently after an illness of two years. Mr. DeLorme was a member of Chicago Perfumery, Soap & Extract Association, Inc. and also of the Chicago Drug & Chemical Association.

ONLY PROSPECTS TODAY....
THEY'LL BE YOUR CUSTOMERS TOMORROW!



OURS is no new magic for multiplying sales, but simply a common-sense, business-building formula based upon two assumptions: 1. That pleasant fragrance adds greatly to any household product's acceptance in the home; 2. That the creation of an outstanding fly spray or insecticide demands as much artistry and imagination as the compounding of odors for toiletries or cosmetics. When the problem, therefore, of perfuming his product is turned over to us, the spray manufacturer can be very sure that the best minds among our laboratory specialists will have an active part in its solution. He can be sure, too, that the new fragrance will embody every feature essential to his satisfaction and to its continuous and profitable use. It will provide complete coverage; its fragrance will be pleasant and distinctive . . . lasting and stable; it will be economical to use; finally, it will be compounded from materials of which we can assure ample, future supplies. And in these uncertain times, **that** is a vital consideration.

Already, a new season looms ahead. Why not give us ample time to render utmost service by discussing your odorizing problems with us **NOW?**

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

A FRITZSCHE PRODUCT for EVERY PURPOSE . . .

ESSENTIAL OILS . . . The FRITZSCHE label on your Essential Oil container is an absolute guarantee of purity and complete conformity to the highest standards. These basic materials are the finest that modern methods and experience can produce.

AROMATIC CHEMICALS . . . For finer aromatic effects and greater economy, choose your chemical requirements from this large and superlative selection of materials.

FIXATIVES . . . Timely now are our four Artificial Animal Scents—Musk, Civet, Castoreum and Ambergris, all especially adaptable to soap making. Our complete line includes, also, Rose Crystals —one of the best fixatives for all-around use.

ANTI-OXIDANTS . . . Developed for the preservation of soaps, animal and vegetable fats and oils, these materials are highly important to the soap manufacturer. Write us for details concerning Oxidex.

BATH SALT PERFUMES . . . These materials, combining both perfume and color, greatly facilitate the process of manufacture. Write for circular describing our Bath Perstels and giving complete list of perfume-color blends.

INSECTICIDES AND DISINFECTANTS . . . Some of our most important research achievements have been in this field of investigation. All materials listed in our catalog and recommended for these purposes have behind them guarantees of experience and the indisputable tests of time.

DEODORIZING COMPOUNDS . . . Write us for circulars describing Neutroleum, Javollal, Methalate "C", Safrella and other important deodorizing compounds of proven effectiveness.

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LIQUID SOAP AND SHAMPOO PERFUMES . . . Being highly soluble and mixing readily with liquid soaps, these special perfume blends are easy to use and low in cost.

DENTAL AND ORAL FLAVORS . . . These flavoring specialties are skillfully blended to produce pleasant, clean, refreshing taste effects. We are prepared, also, to create flavor blends to meet your own specifications and costs. Please feel free to consult us.

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FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

Bedell Heads Mich. Trade Ass'n

A. S. Bedell, treasurer and assistant secretary of Beauty Counselors, Inc., Detroit, was recently elected president of the Allied Drug and Cosmetic Association of Michigan for the year 1941. Mr. Bedell replaces Walter Daniel, of Parke, Davis & Co., Detroit, who will serve on the executive committee. Other new officers elected are: vice-president,—R. P. Cole, Eaton Clark & Co.; secretary,—Maison G. deNavarre; treasurer,—R. L. Clarke, Hazel Atlas Glass Co.; executive committee, —G. Buck, Standard Oil Co., and O. Wegner, Nelson Baker Co., A. R. Vicary, Mark W. Allen & Co., continues as life member of the executive committee.

—— ♦ ——

Essential Oil Ass'n to Meet

The Fssential Oil Association of U. S. A. will hold its annual meeting and election January 9 at the Hotel Warwick, New York. The business session, which is limited to members, will be held at 6:00 P.M. Following it there will be a cocktail party and dinner. Arrangements for the affair are being handled by a committee named by Charles Fischbeck, of P. R. Dreyer Inc., president of the association, and composed of William Schilling, Jr., Norda Essential Oil & Chemical Co., chairman; Robert B. Magnus, Magnus, Mabee & Reynard, Inc., and Ray C. Schlotterer, managing director of the association.

—— ♦ ——

Colgate Heads Seeing Eye

Henry A. Colgate, member of the board of directors of Colgate-Palmolive-Peet Co., Jersey City, N. J., and a partner in James B. Colgate & Co., New York, was recently elected president of Seeing Eye, Inc., Morristown, N. J., where blind persons obtain German shepherd dogs for guides.

—— ♦ ——

With Kirk Soap 40 Years

Miss Catherine Rennebaum, an employe of the James S. Kirk Soap Co., for forty years, died in Chicago Nov. 28 at the age of 62. Her father, Henry Rennebaum, who died two years ago, had been with the same company fifty years.

U.S.I. ALCOHOL NEWS

January ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1941

CREAM WARDS OFF IVY POISONING

Preparation Containing Alcohol Suggested to Prevent Skin Rash

Protection from poison ivy is afforded by prior application of a vanishing cream, it has been reported by members of the U. S. Public Health Service. The cream is said to have the following proportions:

Stearic acid (triple pressed)	200 gr.
Potassium hydroxide	14 gr.
Water	800 cc.
Alcohol (90%)	40 cc.

5 grams of sodium perborate are then added to every 50 grams of this composition.

While tests appear to indicate that the cream offers very good protection, it is said that it is granular in character and does not rub well into the skin. The formula may therefore offer opportunity for further experimentation in the effort to develop an improved product.

When ivy poisoning has been contracted, one sufferer reports that relief has been obtained with equal volumes of aqua ammonia and absolute ethyl alcohol.

Outdoor sports can be enjoyed without danger of ivy poisoning if an alcohol-containing cream is rubbed into the skin before exposure, it was recently reported.

PAPRIKA IS MANUFACTURED WITH AID OF S. D. ALCOHOL

Popular condiment for foods, paprika is manufactured with the aid of Specially Denatured Alcohol. Source of paprika is Chili Peppers. Capsicum in the peppers is first extracted with S. D. Alcohol 2B, and peppers are then ground. The S. D. Alcohol, it is said, gives a cleaner, more vivid color than other solvents, produces no unpleasant odors during manufacture.

TECHNICAL DEVELOPMENTS

For further information write U.S.I.

Cashew nut shells offer a source from which a new process extracts materials suitable for germicides, food flavorings, and perfume materials, according to a recent patent. **(No. 410a)**

Transparent packages can be made by a new process that makes possible intricate shapes without joints or cemented corners, it is claimed. **(No. 411a)**

Jellies comparable to tragacanth in viscosity can be made with a specially prepared methyl cellulose, it is reported. It is said that the jellies are suitable for pharmaceutical and cosmetic purposes. **(No. 412a)**

An oakmoss substitute is said to replace genuine oakmoss in all perfumes and toilet preparations where a powerful fixative is desired. Maker states that it will not discolor toiletries. **(No. 413a)**

Collapsible tubes of transparent cellulosic material are now being made, it is reported. Tubes may provide a substitute for metals if a shortage should occur. **(No. 414a)**

A perfume base is said to be suitable for use in replacing oil of neroli in many types of toilet and cosmetic preparations. **(No. 415a)**

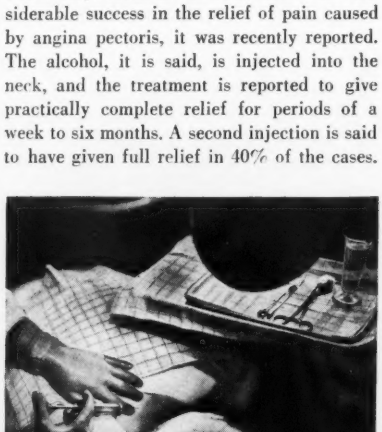
A sealing compound is resistant to ethyl and isopropyl alcohols, it is claimed. Maker states that it is suitable for sealing specimen jars and bottles of perfume, cologne, and hair preparations, and that it is available in many colors. **(No. 416a)**

Covering power of talc in face powders is improved by a patent process for treating the talc with a fatty acid metal salt, it is claimed. **(No. 417a)**

Precision filling is claimed for a new filling machine designed for powdered products. Machine is said to be available in semi-automatic and automatic types, and to employ a vacuum process without danger of distorting the container. **(No. 418a)**

FIND PURE ETHYL ALCOHOL EASES HEART DISEASE PAINS

Pure ethyl alcohol has been used with considerable success in the relief of pain caused by angina pectoris, it was recently reported. The alcohol, it is said, is injected into the neck, and the treatment is reported to give practically complete relief for periods of a week to six months. A second injection is said to have given full relief in 40% of the cases.



An injection of pure ethyl alcohol is frequently employed to relieve pain by suspending function of the nerves. A somewhat similar technique is employed in the new treatment for angina pectoris, in which neck injections are used to affect the action of the nerves controlling heart muscle arteries.

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INDUSTRIAL ALCOHOL IN ALL GRADES AND ALL FORMULAS

CONTRACTS AWARDED

Grit and Laundry Soap Award

M. H. Fairchild & Bro., Chicago, was recently awarded a contract for 12,000 cakes grit soap at 2.69c by the Army Quartermaster Corps, Jeffersonville, Ind. In the same opening Colgate-Palmolive-Peet Co., Jersey City was awarded a contract for 168,000 lbs. ordinary laundry soap at 2.83c lb.

Ft. Mason Awards

In a recent opening by the Army Quartermaster Corps at Ft. Mason, Calif., the following contracts were awarded: Newell Gutradt Co., San Francisco, 60,000 cakes toilet soap at 2c.; 10,000 cakes toilet soap, 6-oz., at 2c.; 5,000 cakes grit soap at 3.5c; 10,000 cakes toilet soap at 2.4c. delivered; Crowley Tar Products Co., New York, 70,000 lbs. naphthalene flake at 6.4c.; Mt. Hood Soap Co., Portland, Ore., 15,000 lbs. laundry soap at 3c. lb., fob Portland; Armour & Co. of Delaware, South San Francisco, 4,320 cans floor scouring powder at 2.68c.; Pioneer Soap Co., San Francisco, 36,000 lbs. powdered laundry soap at 5.24c.; Los Angeles Soap Co., San Francisco, 18,000 2-oz. cakes toilet soap at 1.02c.; Bonestell & Co., San Francisco, 500 gal. liquid insecticide at 79c.; Braun-Knecht-Heimann, San Francisco, 15,000 lbs. naphthalene flake at 6.35c.

Insecticide Award

R. M. Hollingshead Co., Camden, N. J., was recently awarded a contract by the Veterans Administration, procurement division, Washington, D. C., for 11,600 gals. of insecticide at 40.7c. gal.

Army Contracts Awarded

In a recent opening by the Army Quartermaster Corps at Jeffersonville, Ind., a contract was awarded to Naphthalene Products Co., Birmingham, for 22,862 lbs. naphthelene, flake, at 6.3c lb. West Disinfecting Co., L. I. City, was awarded a contract for 1,000 gals. disinfectant at $1.70 gal. by the Army Ordnance for the Picatinny Arsenal, N. J., and Conray Products Co., New York, a contract for 800 lbs. carnauba wax at 66c.

Toilet Soap Bid

Manhattan Soap Co., New York, was the low bidder on 18,000 lbs. toilet soap at 5.29c in a recent opening by the Treasury Procurement Division, Washington, D. C.

Army Soap Awards

In recent openings by the Army Quartermaster Corps, the following contracts were awarded: For Brooklyn: Armour & Co., Chicago, 31,600 lbs. castile soap, 30.82c. lb.; Asco Chemical Co., Brooklyn, 25,500 lbs. saddle soap, 14c.; Sterling Supply Co., Phila., 200,000 lbs. laundry soap 5.08c. For Chicago: Colgate-Palmolive-Peet Co., Jersey City, 650,000 cakes soap, 2.8c. ea.; M. H. Fairchild & Bro., Chicago, 49,000 cakes soap, 1.85c. For Ft. Mason, Calif.: Colgate - Palmolive - Peet, Berkeley, Calif., 17,500 lbs. laundry soap, 3.47c.; Newell Gutradt Co., San Francisco, 7,500 cakes grit soap, 2.75c.

Phosphate Awards

Buromin Co., Pittsburgh, was awarded the contract on 2,000 lbs. sodium hexametaphosphate at 23.57c. in a recent opening by the Chemical Warfare division. In the same opening, Interboro Chemical Co., New York, was awarded the contract on 2,275 lbs. trisodium phosphate at 2.94c.

Floor Wax Bids

In a recent opening by the Marine Corps, Washington, D. C., the following low bids were submitted: on 200 gals. wood floor sealer, 74c., by Paint Engineers, Hawthorne, N. J.; on 450 lbs. paste wax, 10.4c., and on 120 gals. water emulsion floor wax, 58.8c., by Waxaid Co., Baltimore.

Cleanser Award

Fuld Bros., Baltimore, was awarded a contract for 20,000 cans cleanser at 8c., by the Army Quartermaster Corps, Atlanta, in a recent opening.

Grit Soap Awards

Unity Sanitary Supply Co., New York, was awarded a contract on 78,000 cakes grit soap at 3.2c. and 1,020 cakes grit soap at 3.4c. by the Army Quartermaster, Atlanta.

Insecticide and Polish Award

Imperial Products Co., Phila., was awarded contracts on 498 gals. insecticide at 49c. and 4,992 pts. metal polish at 8.2c. by the Army Quartermaster Corps, Atlanta.

Soft Soap Bids

Harley Soap Co., Philadelphia, bid low on 115,000 lbs. soft soap at 3.98c., f.o.b. plant, in a recent opening by the Army Air Corps. In the same opening Swan-Finch Oil Corp., New York, entered a low bid of 3.84c., f.o.b. plant, on 170,000 lbs. soft soap.

Laundry Soap Bid

Iowa Soap Co., Burlington, Iowa, entered the low bid of 2.8c. on 39,960 lbs. laundry soap in a recent opening for the Panama Canal at Washington, D. C.

Polishing Wax Award

R. M. Hollingshead Co., Camden, N. J., was recently awarded a contract for 400 lbs. polishing wax at 27.9c. by the Army Quartermaster Corps, Brooklyn.

Cresol Bid

Crystal Soap & Chemical Co., New York, submitted the low bid of 31.6c. less $1 for each drum returned, on 220 gals. non-corrosive cresol in 55-gal. drums, in a recent opening by the Government Printing Office, Washington, D. C.

TSP vs TSPP

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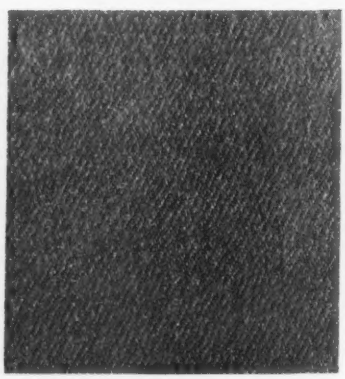
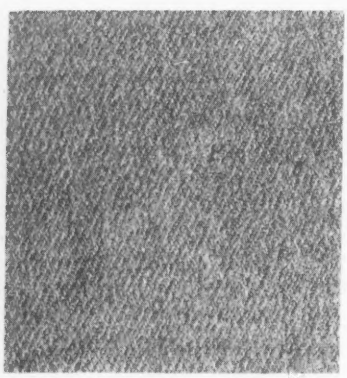
TSPP-BUILT SOAPS DEMONSTRATE SUPERIORITY IN WASHING TESTS



SOILED SAMPLE PRIOR TO WASHING



SOILED SAMPLE WASHED IN 85% SOAP + 15% TSP (conc. 0.30%)

SOILED SAMPLE WASHED IN 85% SOAP + 15% TSPP (conc. 0.30%)

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TRADE MARKS

The following trade-marks were published in the December issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

INDALONE—This in solid letters describing insecticide. Filed by U. S. Industrial Chemicals, Inc., New York, Oct. 8, 1940. Claims use since Sept. 20, 1940.

BOLOPOR—This in solid letters describing cleaning preparation. Filed by General Chemical Co., New York, Sept. 7, 1940. Claims use since July 24, 1940.

TESTERLITE—This in solid letters describing detergent. Filed by Tes Ter Lite Cleaner Co., Montgomery, Ala., Apr. 19, 1940. Claims use since Feb. 26, 1940.

AUSTIN'S—This in script letters describing cleaner. Filed by Harry G. Austin, James Austin Co., Pittsburgh, Aug. 6, 1940. Claims use since May 1, 1890.

HOOPOE—This in solid letters over drawing of rooster describing rug cleaning compound. Filed by John G. Alexanian, Alexanian & Co., South Bend, Ind., Sept. 27, 1940. Claims use since June 27, 1919.

DEE-SOLV—This in solid letters describing solvent. Filed by Circo Products Co., Cleveland, Sept. 27, 1940. Claims use since Oct. 3, 1937.

ORAL-TONE—This in solid letters describing dentifrice. Filed by Charles R. Hatcher, Oral-Tone Co., Dallas, May 20, 1940. Claims use since June 1, 1920.

DOWFUME—This in solid letters describing fumigant. Filed by Dow Chemical Co., Midland, Mich., Aug. 6, 1940. Claims use since Jan., 1932.

WHITE CRUSADER — This in solid letters over knight on horseback describing disinfectants and insecticides. Filed by Louis Mandlak, Fort Worth, Tex., Sept. 3, 1940. Claims use since Jan. 1, 1932.

MITIN—This in solid letters describing mothproof. Filed by Geigy Co., New York, Sept. 20, 1940. Claims use since Mar. 20, 1940.

PARTO—This in solid letters describing shampoo and toothpowder. Filed by Partola Products Co., Chicago, Sept. 21, 1940. Claims use since April, 1907.

JOHN H. TAFT—This in script letters within seal describing shampoo, disinfectant and tooth powder. Filed by Partola Products Co., Chicago, Sept. 21, 1940. Claims use since July 10, 1933.

DEMOTEX—This in solid letters describing mothproofing material. Filed by Demotex, Inc., New York, Oct. 22, 1940. Claims use since Apr. 3, 1939.

WE SUPPLY EVERYTHING BUT THE JANITOR—This in solid letters under man carrying janitorial supplies describing disinfectants. Filed by Clan Mfg. Co., Camden, N. J., Aug. 7, 1940. Claims use since Dec., 1930.

SHOOT TO KILL—This in solid letters describing insecticide. Filed by Alexander Frank, Feco Exterminating Products, New York, Oct. 26, 1940. Claims use since Jan., 1939.

G M C —This in solid letters describing insecticide. Filed by Getz Mfg. Co., Chicago, Oct. 31, 1940. Claims use since April, 1939.

AMERICANA — This in fancy letters describing toilet soaps. Filed by Milton E. Feldman, Coventry Soap Co., New York, Sept. 4, 1940. Claims use since Mar. 1, 1940.

WHITE SAIL — This in solid letters describing soaps. Filed by Great Atlantic & Pacific Tea Co., New York, Oct. 3, 1940. Claims use since July 9, 1940.

DANBEE—This in solid letters describing soap impregnated wash cloths. Filed by D. & B. Laboratories, Norwich, N. Y., Oct. 7, 1940. Claims use since Sept. 30, 1940.

PRO—This in solid letters describing liquid dentifrice. Filed by Pro-Phy-Lac-Tic Brush Co., Northampton, Mass., Oct. 16, 1939. Claims use since Apr. 15, 1937.

TREASURE ISLE—This in Old English letters describing shampoo. Filed by Hibben, Hollweg & Co., Indianapolis, Jan. 18, 1940. Claims use since Dec. 29, 1939.

ROTOSOLVE—This in solid letters describing insecticide. Filed by Givaudan-Delawanna, Inc., New York, May 31, 1940. Claims use since May 17, 1938.

DESEPTIZING — This in solid letters describing bactericidal preservative. Filed by Givaudan-Delawanna, New York, May 31, 1940. Claims use since May 24, 1940.

FLEECY FLAKES—This in script letters describing soap flakes. Filed by Hewitt Soap Co., Dayton, May 27, 1939. Claims use since Feb. 10, 1937.

HOLLYWOOD BUBBOBATH—This in script and solid letters describing saponaceous material. Filed by Bubbobath Co., Minneapolis, Mar. 13, 1940. Claims use since Dec. 6, 1938.

FISTASERM—This in solid letters describing insecticide. Filed by Rudolf Pfister, Pfisterizing Co., New York, May 17, 1940. Claims use since May 13, 1940.

NOX-ZAL—This in solid letters describing shaving cream. Filed by Paul Gunzburg, Pittsburgh, Sept. 6, 1940. Claims use since Jan. 1, 1930.

TWILL—This in script letters describing shampoo. Filed by Lem-Pet, Chicago, Apr. 1, 1940. Claims use since Sept. 20, 1939.

PERUIN—This in script letters over globe describing tooth paste. Filed by Leo Lescinskis, New Haven, Conn., July 2, 1940. Claims use since May 20, 1940.

SNO-MIST—This in solid let-

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ters describing deodorant. Filed by Phillips & Benjamin Co., Waterbury, Conn., July 23, 1940. Claims use since July 8, 1940.

LUCKY HEART—This in script letters within heart describing shampoo. Filed by Lucky Heart Laboratories, Memphis, Aug. 14, 1940. Claims use since Oct. 20, 1934.

TREV—This in solid letters describing shampoo. Filed by Orville J. Vert, Vert Cosmetic Co., Maxwell, Iowa, Sept. 11, 1940. Claims use since Dec., 1936.

DE-FEET—This in solid letters describing athlete's foot preparation. Filed by John J. Green, De-Feet Co., Wilkes-Barre, Pa., Sept. 10, 1940. Claims use since March, 1932.

TRELAK—This in solid letters describing shampoo. Filed by Trelak Co., St. Louis, Aug. 19, 1940. Claims use since July, 1939.

TONY'S PESTICIDE — This in solid letters describing insecticide. Filed by Antone Rella, Tony's Pesticide Co., Telluride, Colo., May 24, 1940. Claims use since Jan. 1, 1939.

ANT-B-GON—This in solid letters describing container for feeding poison to parasites. Filed by Robert B. Loibl, Jr., Los Angeles, Feb. 19, 1940. Claims use since Nov. 15, 1939.

MOPAR—This in relief letters on arrow describing cleaner. Filed by Chrysler Corp., Highland Park, Mich., Apr. 8, 1940. Claims use since Aug. 31, 1937.

WIPE-AWAY — This in solid letters describing cleaner. Filed by Papik Products Co., St. Louis, May 13, 1940. Claims use since Aug. 25, 1939.

X-O—This in outline letters describing cleaner. Filed by A. A. Quality Products, Inc., New York, Sept. 16, 1940. Claims use since Apr. 25, 1940.

SWABO—This in solid letters describing cleaner. Filed by Swabo Co., Inc., Webster, Mass., Sept. 20, 1940. Claims use since Aug. 1, 1940.

UNI-VAL—This in solid letters describing wall paper cleaner. Filed by United Wall Paper Factories, Inc., Chicago, Oct. 11, 1940. Claims use since Apr. 26, 1940.

DECOREX—This in solid letters describing detergent. Filed by General Chemical Co., New York, Oct. 12, 1940. Claims use since Sept. 11, 1940.

BRAYLA—This in outline letters describing skin cleaner. Filed by Brayton C. Zimmerman, West Englewood, N. J., Oct. 10, 1938. Claims use since July, 1938.

KIL-RAT—This in solid letters describing rat poison. Filed by W. F. Rosser, Farm Products Co., Flat River, Mo., July 29, 1939. Claims use since Jan., 1935.

DR. SYLVESTER'S—This in relief letters describing disinfectant and cleaner. Filed by A. Aarons Co., Inc., New Orleans, Apr. 27, 1940. Claims use since Apr. 4, 1940.

PADIS — This in solid letters describing shampoo. Filed by Pacific Distributors, Inc., Los Angeles, Aug. 23, 1940. Claims use since May, 1940.

WASH-WITE — This in solid letters describing bleach. Filed by Markets, Inc., Oakland, Calif., Sept. 13, 1940. Claims use since Aug. 8, 1940.

ETHIDE—This in solid letters describing insecticides. Filed by Commercial Solvents Corp., New York, Sept. 20, 1940. Claims use since Aug. 15, 1940.

WASH-TEX — This in outline letters describing bleach. Filed by Kitchen Products, Inc., Chicago, Sept. 21, 1940. Claims use since Mar. 12, 1940.

CISCO SAM—This in solid letters describing disinfectant. Filed by Cities Service Oil Co., Bartlesville, Okla., Oct. 8, 1940. Claims use since Aug. 23, 1940.

LYBOZO—This in outline letters describing deodorant, toothpaste and shampoo. Filed by Simon Kleinkramer, Nov. 2, 1940. Claims use since Oct. 11, 1940.

CAR-GLO—This in relief letters over automobile illustration describing automobile polish. Filed by Benjamin Weissner, Car-Glo Products Co., New York, Aug. 7, 1940. Claims use since June 3, 1940.

ENDURO—This in solid letters describing polish. Filed by Midwest Manufacturing Co., Detroit, Mich., Sept. 5, 1940. Claims use since Feb. 1, 1931.

Trade Marks Granted

382,556. Citronella candles. Clifford D. Stewart, C. D. Stewart Co., Boston. Filed July 10, 1940. Serial No. 433,836. Published Aug. 20, 1940. Class 6.

382,558. Fungicide. Upjohn Co., Kalamazoo, Mich. Filed July 11, 1940. Serial No. 433,877. Published Aug. 20, 1940. Class 6.

382,619. Powdered soap. Max Finger, U + S Zoned Soap Co., Ft. Wayne, Ind. Filed Feb. 6, 1940. Serial No. 428,284. Published Aug. 27, 1940. Class 4.

382,627. Paint cleaner. Lillian Pritzert, New York. Filed April 10, 1940. Serial No. 430,626. Published Aug. 27, 1940. Class 4.

382,639. General cleaner. Bigelow-Sanford Carpet Co., Thompsonville, Conn. Filed May 6, 1940. Serial No. 431,583. Published Aug. 27, 1940. Class 4.

382,649. Shoe polish. Griffin Manufacturing Co., New York. Filed May 29, 1940. Serial No. 432,470. Published Aug. 3, 1940. Class 4.

382,663. Household cleaner. Catherine I. Burns, Riverview Chemical Co., St. Louis, Mo. Filed June 12, 1940. Serial No. 432,922. Published Aug. 27, 1940. Class 4.

382,668. Soap. Mary Chess, Inc., New York. Filed June 14, 1940. Serial No. 433,005. Published Aug. 27, 1940. Class 4.

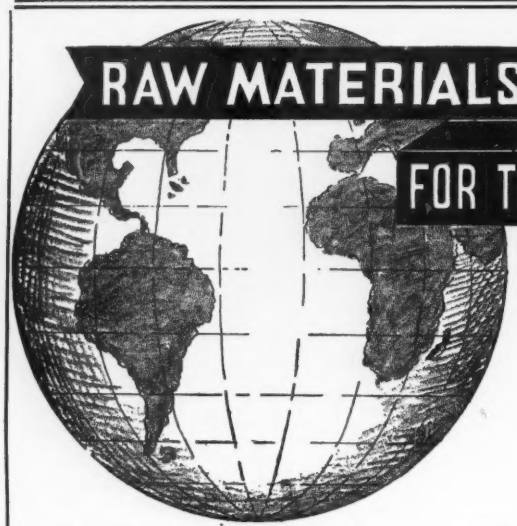
382,688. Soap flakes and granules. Procter & Gamble Co., Cincinnati. Filed June 26, 1940. Serial No. 433,407. Published Aug. 27, 1940. Class 4.

382,756. Paint cleaner. Arthur Siegel, Kitch Kab Chemical Co., Maspeth, N. Y. Filed Feb. 17, 1940. Serial No. 428,646. Published Sept. 3, 1940. Class 4.

382,774. Soap. Miller Soap Products, Inc., Los Angeles. Filed Apr. 27, 1940. Serial No. 431,314. Published Sept. 3, 1940. Class 4.

382,775. Soap. Miller Soap Products, Inc., Los Angeles. Filed

(*Turn to Page* 136)



RAW MATERIALS 1838-1941

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Corn Oil	Perilla Oil	Neatsfoot Oil	Caustic Soda	Metasilicate
Cottonseed Oil	Rapeseed Oil	Oleo Stearine	Soda Ash	Tri Sodium Phosphate
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RAW MATERIAL MARKETS

As of December 30, 1940

NEW YORK—The general tone of the market for soap and sanitary chemicals raw materials became firmer toward the end of the year reflecting an improvement in the domestic picture with prices continuing to move in an upward direction. Both domestic and imported fats and oils and many essential oils figured in the price movement and are currently quoted at higher levels than a month ago. While purchasing was still largely "hand-to-mouth," an increase was noted in some quarters in the volume of orders for small quantities, the upturn in cottonseed oil and lard futures having a tendency to stimulate buying interest in some other oils and fats. A continuance of the upswing in prices is expected to take place during 1941 as a result of improvement in domestic demand and reduced lard and grease output. According to index numbers based on the prices of soap fats (index numbers 1924-29=100) prepared by the Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C., soap fat prices reached a low for the year in August, 1940, at which time the index number was 54. Since August, prices have advanced steadily.

Among the essential oils, scarcity of supplies and lightness of shipment offerings became more pronounced during the month, occasioning further price advances. Carnauba wax prices were reduced somewhat during the period in a sensitive market; prices are lower in Brazil. Insecticide materials, notably rotenone-bearing roots, were reduced slightly as compared with a month ago.

Animal Fats

Light offerings, and a quiet, steady tone characterized the animal fats markets during December. Extra tallow is currently quoted at 4¾c, delivered; and special tallow at 4⅝c, delivered. Yellow house grease is 4¼c a pound, and choice, white, 4¾c, nominal.

Vegetable Oils

Coconut oil was advanced ⅛ cent a pound this period, tankcars at New York being quoted at 3 cents a pound with all indications for another advance of ⅛ cent in the near future. On the Pacific Coast, coconut oil in tanks was benig quoted at 2⅝ to 2¾ cents a pound. Recent increases in the price of copra, Coast, shipment, necessitated the advance. Babassu oil was likewise advanced ⅛ cent to a current level of 6 cents a pound. Sumatra palm oil, cif, New York, remains at last month's level of 2¼ cents a pound. Denatured olive oil was shaded slightly during the period to a current range of $2.35 to $2.40 a gallon, buyers generally awaiting new developments abroad. Olive foots, drums, N. Y., was advanced ¼ cent early in the period to a current price of 10¼ cents a pound. Corn, cottonseed, and linseed oil were also advanced in price during the month, while soyabean oil eased off from the high price reached last month. In the market for fatty acids, prices remained steady, little change being noted.

Essential Oils

Certain essential oils became almost impossible to obtain this month except in small quantities and at much advanced prices. Others continued to become scarcer and higher. Bois de rose, Brazilian, was advanced by some sellers to a range of $2.40 to $2.50 a pound while the Cayenne grade was reported exceedingly hard to obtain and was not being quoted by certain houses. Little, if any, supplies of oil of cananga are on the market; the price for the native material of $3.50 to $4.00 a pound being purely nominal. Other perfume materials now quoted at higher levels than last month include oil of rosemary, peppermint, spearmint, patchouli and lavender spike. Oil of anise, U. S. P., an exception in the upward movement, was reduced to a range of 85 to 90 cents a pound.

◆

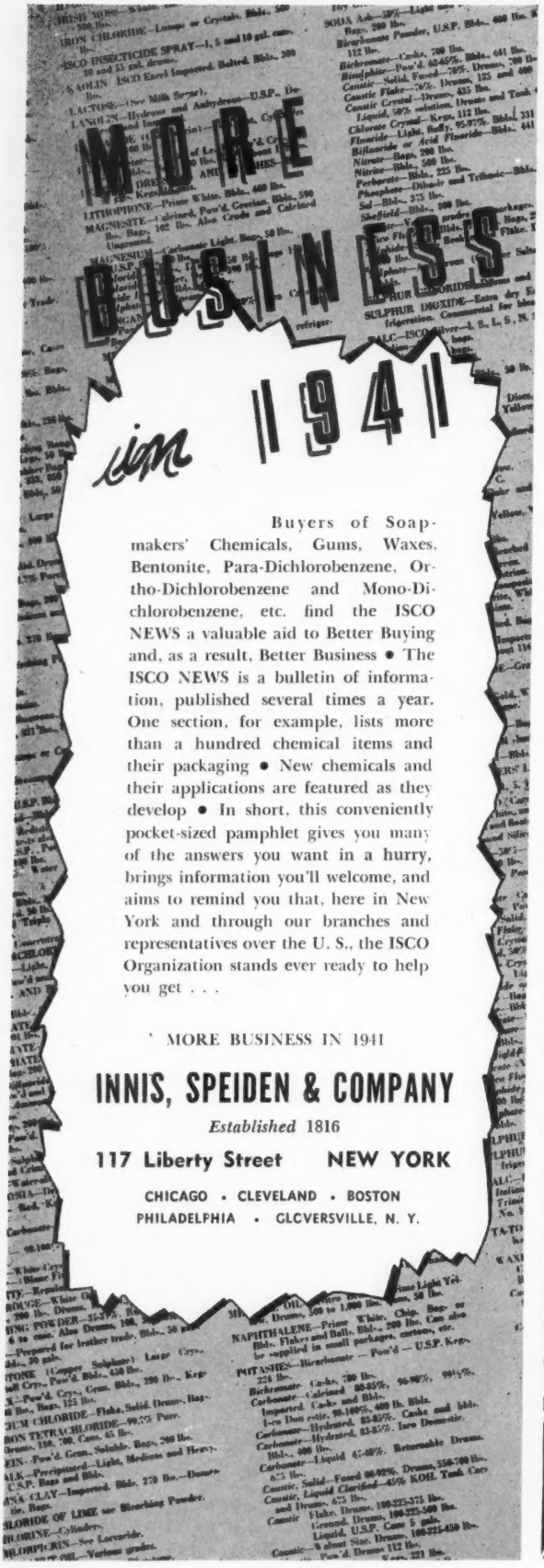
Propose Soap Spec. Changes

Proposed modifications of U. S. Federal specifications for Soft Soap (P-S-612) and for Potash Linseed Soap (P-S-613) have recently been issued to the trade for comment and suggestion by C. W. Chamberlin, Federal Works Agency, Public Buildings Administration, Washington, D. C. Copies of the proposed new specifications are available to soap makers for study.

◆

To Adopt Oil Standards

The Essential Oil Association of U.S.A. plans to release in the near future a book of standard specifications of essential oils which have not previously been adequately covered by monographs of the United States Pharmacopoeia and the National Formulary. Whereas existing standards have always been accepted as a fairly accurate consumer yardstick, they were set up primarily for medical uses and were not intended to apply to substances sold for technical and non-medical uses. The new recommendations will contain suggested revisions in specifications wherever modern practice and conditions have justified them. It is believed that in time they will be adopted as "official."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SOAPS

RAW MATERIAL PRICES

(As of December 30, 1940)

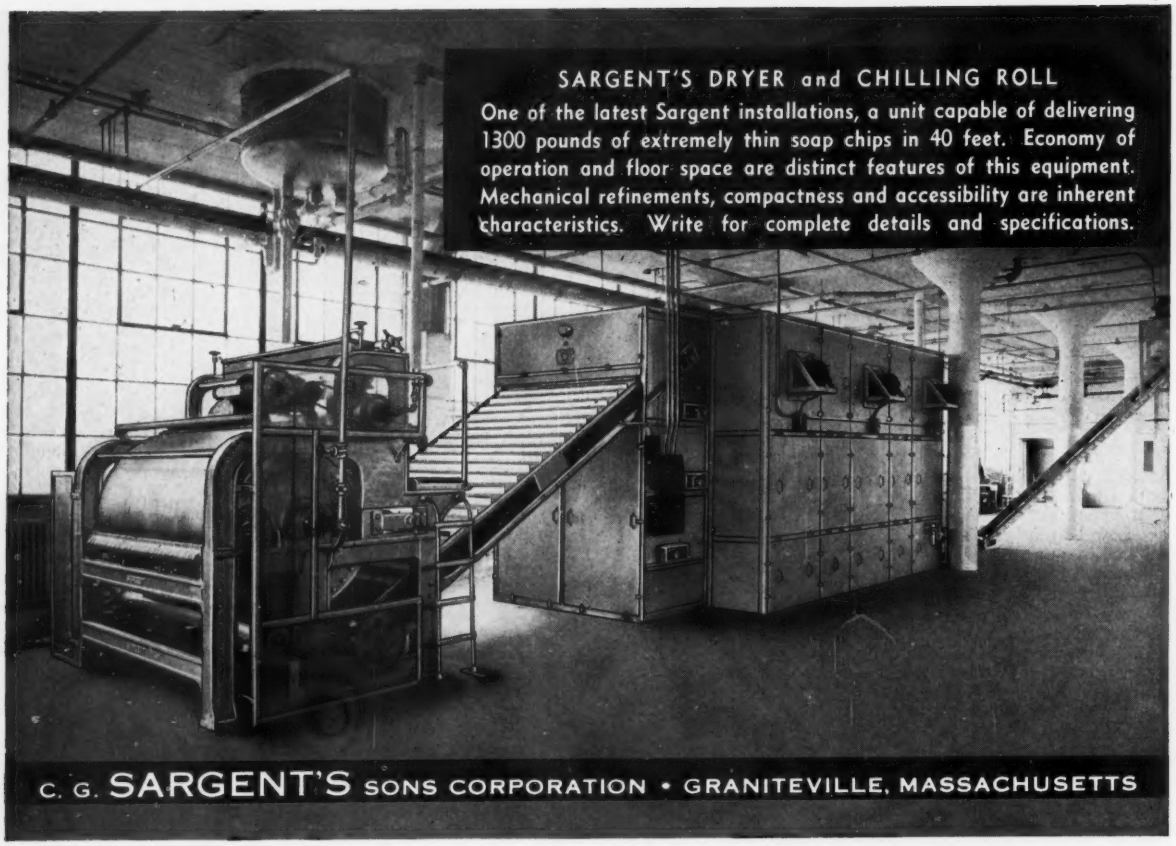
Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .07½	$ .08
Acid, Boric, bbls. 99½%	ton	96.00	128.00
Cresylic, drums	gal.	.68	.70
Low boiling grade	gal.	.68	.70
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, drums	lb.	.24½	.25
Anhydrous, drums	lb.	.26½	.27
Alcohol, Ethyl, U.S.P., bbls.	gal.	6.00½	6.07
Complete Denat., SD 1, dms., ex.	gal.	.30½	.35½
Alum. Potash lump, bbls.	lb.	.04	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	—
Bentonite, 1, works, 325 mesh	ton	16.00	—
Bentonite, 2, works, 200 mesh	ton	11.00	—
Bleaching Powder, drums	100 lb.	2.00	3.35
Borax, pd., cryst., bbls., kegs	ton	58.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	1.10
L. C. L.	gal.	.73	1.20
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	16.00
Cresol, U.S.P., drums	lb.	.09¾	.10¼
Creosote Oil	gal.	.13½	.14½
Feldspar, works (200 to 325 mesh)	ton	32.00	35.00
Formaldehyde, bbls.	lb.	.05½	.06
Fullers Earth	ton	15.00	—
Glycerine, C.P., drums	lb.	.12½	.13
Dynamite, drums	lb.	—	Nom.
Saponification, drums	lb.	.08⅛	.08¾
Soap, lye, drums	lb.	.07⅛	.07⅜
Hexalin, drums	lb.	.30	—
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	—	2.45
Mercury Bichloride, kegs	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.07	.07¼
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorbenzene, drums	lb.	.11	.13½
Petrolatum, bbls. (as to color)	lb.	.02¾	.07½
Phenol (Carbolic Acid), drums	lb.	.13	.14¾
Pine Oils, bbls.	gal.	.50	.59
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07½
Liquid, 45% basis	lb.	.03½	.03¾
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.03	.03⅛
Pumice Stone, powder	100 lb.	No Prices	
Rosins (net wt., ex yard, New York)—			
Grade D to H	100 lb.	2.07	2.40
Grade I to N	100 lb.	2.40	2.85
Grade WG to X	100 lb.	3.17	3.40
Wood, ex. dock	100 lb.	1.40	1.90
Rotten Stone, pwd., bbls.	lb.	—	—
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.20	.35
Olive Castile, powder	lb.	.26	.36
Powdered White, Neutral	lb.	.18½	.20
Olive Oil Foot, bars, 68-70%	lb.	.09	—
Green, U.S.P.	lb.	.08	.09
Tallow Chips, 88%	lb.	.06⅛	.06¾
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.10	1.35
Carlots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.95	—
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	15.00	15.60
Sodium Fluoride, bbls.	lb.	.07	.08¼
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, ground	100 lb.	3.75	4.80
Crystalline	100 lb.	2.35	3.35
Sodium Pyrophosphate	100 lb.	5.10	5.60
Sodium Silicate, 40 deg., drum	100 lb	.80	1.20
Drums, 52 deg. wks.	100 lb	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.27
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	lb.	.0225	.0335
Zinc Oxide, lead free	lb.	.06½	.07

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.06	Nom.
Castor, No. 1, bbls.	lb.	.10	.10¾
No. 3, bbls.	lb.	.09½	.10¼
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.03	.03⅛
Tanks, Pacific Coast, futures.	lb.	.02⅝	.02¾
Copra, bulk, coast	lb.	.0155	—
Corn, tanks, Mills	lb.	.06	.06¼
Cottonseed, crude, tanks, mill	lb.	.05	.05⅛
PSY, futures	lb.	.06⅛	.06¼
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.08¼	.08½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.09¼	.09½
Cotton Oil, tanks, Chicago	lb.	.07¼	.07½
Settled soap stock, Chicago	lb.	.02⅝	.02¾
Boiled soap stock, 65%, Chi.	lb.	.03⅝	.03¾
Foots, 50%, Chicago	lb.	.01⅜	.01½
Red Oil, bbls., dist. or sapon.	lb.	.06¾	.07¼
Tanks	lb.	.06¼	—
Stearic Acid, saponif.			
Double pressed	lb.	.09¼	.09¾
Triple pressed	lb.	.12	.12¼
Greases, choice white, tanks	lb.	.04¾	—
Yellow	lb.	.04¼	—
Lard, city	lb.	.04⅝	—
Linseed, raw, bbls.	lb.	.0880	.0980
Tanks, raw	lb.	.0820	.0840
Olive, denatured, bbls., N. Y.	gal.	2.35	2.40
Foots, bbls., N. Y.	lb.	.10¼	.10½
Palm, Sumatra, cif. New York, tanks	lb.	.02¼	—
Palm. kernel. shipment	lb.	No Prices	
Soya Bean, domestic, tanks, crude	lb.	.04⅝	.04¾
Stearine, oleo, bbls.	lb.	.06⅛	—
Tallow, special, f.o.b. plant	lb.	.04½	—
City, ex. loose, f.o.b. plant	lb.	.04⅝	—
Teaseed Oil, crude	lb.	.17½	Nom.
Whale, refined	lb.	.0910	—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(As of December 30, 1940)

Essential Oils

Almond, Bitter, U.S.P.	lb.	$3.00	$3.25
Bitter, F.F.P.A.	lb.	3.15	3.50
Sweet, cans	lb.	.70	.75
Anise, cans, U.S.P.	lb.	.85	.90
Bay, 55-60% phenols, cans	lb.	1.20	1.25
Bergamot, coppers	lb.	15.00	Nom.
Artificial	lb.	3.50	5.00
Birch Tar, rect., cans	lb.	1.00	1.10
Crude, dms.	lb.	.27	.28
Bois de Rose, Brazilian	lb.	2.40	2.50
Cayenne	lb.	2.55	2.75
Cade, cans	lb.	.39	.40
Cajeput, native, cans	lb.	.65	.70
Calamus, cans	lb.	8.25	8.50
Camphor, Sassy, drums	lb.	.22	.24½
White, drums	lb.	.22	.23
Cananga, native, cans	lb.	3.50	4.00
Rectified, cans	lb.	3.80	4.50
Caraway Seed	lb.	6.00	Nom.
Cassia, Redistilled, U.S.P.	lb.	1.50	1.55
Cedar Leaf, cans	lb.	.90	.95
Cedar Wood, light, drums	lb.	.22	.25
Citronella, Java, drums	lb.	.34	.38
Citronella, Ceylon, drums	lb.	.37	.40
Clove, U.S.P., cans	lb.	1.10	1.15
Eucalyptus, Austl., U.S.P., cans	lb.	.65	.67
Fennel, U.S.P., cans	lb.	2.05	2.15
Geranium, African, cans	lb.	12.25	Nom.
Bourbon, cans	lb.	12.00	Nom.
Turkish	lb.	2.50	2.75
Hemlock, tins	lb.	.85	.90
Lavender, 30-32% ester, cans	lb.	5.00	5.25
Spike, Spanish, cans	lb.	1.85	2.00
Lemon, Ital., U.S.P.	lb.	5.00	—
Cal.	lb.	3.25	—
Lemongrass, native, cans	lb.	.78	.80
Linaloe, Mex., cases	lb.	1.60	1.65
Nutmeg, U.S.P., cans	lb.	2.10	2.25
Orange, Sweet, W. Ind., cans	lb.	2.50	2.60
Italian cop	lb.	8.00	Nom.
Distilled	lb.	.90	—
California, expressed	lb.	2.00	—
Origanum, cans, tech.	lb.	1.05	1.45
Patchouli	lb.	5.25	6.00
Pennyroyal, dom.	lb.	3.00	Nom.
Imported	lb.	2.25	2.50
Peppermint, nat., cans	lb.	2.75	3.00
Redis, U.S.P., cans	lb.	2.95	3.35
Petitgrain, S. A., cans	lb.	1.35	1.40
Pine Needle, Siberian	lb.	1.25	1.30
Rosemary, Spanish, cans	lb.	.71	.90
drums	lb.	.63	.80
Sandalwood, E. Ind., U.S.P.	lb.	4.95	5.25
Sassafras, U.S.P.	lb.	1.00	1.25
Artificial, drums	lb.	.68	.78
Spearmint, U.S.P.	lb.	2.40	2.60
Thyme, red, U.S.P.	lb.	.80	1.75
White, U.S.P.	lb.	.95	1.95
Vetivert, Bourbon	lb.	6.50	7.00
Ylang Ylang, Bourbon	lb.	7.00	Nom.

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.60	—
Amyl Cinnamic Aldehyde	lb.	1.70	$2.00
Anethol	lb.	1.10	1.15
Benzaldehyde, tech.	lb.	.45	.50
U.S.P.	lb.	.85	.95
Benzyl, Acetate	lb.	.44	.49
Alcohol	lb.	.63	.68
Citral	lb.	1.40	3.10
Citronellal	lb.	.75	.80
Citronellol	lb.	1.60	1.85
Citronellyl Acetate	lb.	4.00	7.00
Coumarin	lb.	2.75	3.00
Cymene, drums	gal.	.90	1.25
Diphenyl oxide	lb.	.50	.55
Eucalyptol, U.S.P.	lb.	.80	.85
Eugenol, U.S.P.	lb.	1.75	2.00
Geraniol, Domestic	lb.	.60	8.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	1.20	2.50
Heliotropin	lb.	3.00	3.20
Hydroxycitronellal	lb.	2.00	2.50
Indol, C. P.	lb.	32.00	34.00
Ionone	lb.	2.75	3.95
Iso-Eugenol	lb.	2.80	4.25
Linolool	lb.	2.10	3.30
Linalyl Acetate	lb.	1.75	3.00
Menthol	lb.	2.50	3.25
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.20	2.30
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.37
Musk Ambrette	lb.	3.65	3.95
Ketone	lb.	3.70	4.10
Xylol	lb.	1.05	1.20
Phenylacetaldehyde Sp.	lb.	2.10	2.50
Phenylacetic Acid	lb.	1.75	3.00
Phenylethyl Alcohol	lb.	2.30	3.35
Rhodinol	lb.	5.50	10.90
Safrol	lb.	1.00	1.10
Terpineol, C. P., drs.	lb.	.25	—
Cans	lb.	.28	—
Terpinyl Acetate, 25 lb. cans	lb.	.82	.85
Thymol, U.S.P.	lb.	1.55	1.60
Vanillin, U.S.P.	lb.	2.50	2.75
Yara Yara	lb.	1.25	1.55

Insecticide Materials

Insect Powder, bbls.	lb.	.23	.26
Pyrethrum Extract			
5 to 1	gal.	1.20	1.25
20 to 1	gal.	4.75	4.85
30 to 1	gal.	7.10	7.25
Derris, powder—4%	lb.	.17	.20
Derris, powder—5%	lb.	.21	.23
Cube, powder—4%	lb.	.16	.19
Cube, powder—5%	lb.	.19	.22
Squill, dried	lb.	1.00	1.10
Phosphorus paste	lb.	.25	.62½

Gums

Arabic, Amb. Sts.	lb.	.14	.15
White, powdered	lb.	.18	.20
Karaya, powdered No. 1	lb.	.14	.33
Tragacanth, Aleppo, No. 1	lb.	3.50	3.75
Flake	lb.	No Prices	

Waxes

Bees, white	lb.	.36½	—
African, bgs.	lb.	.30	Nom.
Refined, yel.	lb.	.35	.36
Candelilla, bgs.	lb.	.19	.20
Carnauba, No. 1, yellow	lb.	.69	.70
No. 2, N. C.	lb.	.67	.68
No. 3, Chalky	lb.	.57	.58
Ceresin, yellow	lb.	.11	.14½
Paraffin, ref., 125-130	lb.	.0570	—

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Although activated carbon has long been used to remove color and odor from oils to be used for soap, only recently has it been recognized that *undesirable colorless impurities* such as peroxides and pro-oxidants are also removed by this treatment. Soaps made from stable oils have less tendency to spot, chip, or become discolored.

Some soap manufacturers have extended the use of activated carbon to treat certain types of unrefined oils and fats for direct conversion into soap without caustic refining. When the free fatty acids in tallow are less than 4%, it is often possible to decolorize from an original color F.A.C. 11.0 to F.A.C. 1.0, using 0.5% of a suitable carbon. For unrefined cocoanut oil the average dose is 0.25%.

The advantage of applying activated carbon to the unrefined oil includes complete utilization of free fatty acids for manufacture of soap; improvement in color, odor, and stability of the finished soap. Investigate the possibilities of NUCHAR Activated Carbon in the treatment of your fats. Write for sample today.

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PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Toilet Soap Perfuming

SOAP perfuming costs are reduced by saving working losses on the perfume, specifically by means of labor-saving machinery. Water-cooled roller mills help reduce loss of perfume. The mainstay of any soap perfume is the fixative on which the perfume is based. Some perfume substances themselves act as secondary fixatives. Oils which serve in this way as stabilizers and preservatives are, in the order of efficiency: patchouli, sandalwood, vetiver, bois de rose femelle, petitgrain, guaiacwood, citronella, thyme, cinnamon, clove, cassia, aniseed, caraway, geranium, palmarosa, gingergrass, pine and eucalyptus.

The rate of volatilization differs for all perfume materials, high boiling point being taken as a generally reliable indication of low volatility. The combined constituents must affect each other in such a way as to give the desired final degree of volatility. Hence every composition requires different fixation, which usually has to be determined by experiment. Resinous fixatives give the surest protection. As a rule benzoin is the most reliable for delicate floral odors, while styrax is more adapted to pronounced floral odors. Peru balsam is valuable wherever many synthetic solids are used, preventing their crystallization and so avoiding discolored specks. Canada balsam acts similarly, having a useful odor character, and being compatible with oils high in terpenes where the other fixatives are incompatible. Resinoids offer the advantages of economy in preparation, freedom from impurities, and ready solubility.

Intensity of the different odors is the next consideration. Owing to high cost, there is not a very large selection of odor materials but odor value can be enhanced by a judicious use of the more potent of the expensive odorants. Among the essential oils are: almond, aniseed, cananga, cassia, cedarwood, cinnamon leaf, cloves, geranium, gingergrass, lavender, lemongrass, palmarosa, patchouli, petitgrain, rosemary, sassafras, thyme and vetivert. Synthetics and useful chemical compounds include: Amyl salicylate, anisic aldehyde, benzaldehyde, bornyl acetate, bromstyrol, cinnamic aldehyde, coumarin, diphenyl oxide, eugenol, heliotropin, methyl benzoate, methyl salicylate, nerolin, *para*-cresol methyl ether, *para*-methyl acetophenone, phenyl acetic acid, safrol terpineol, the violet ketones for soap, and terpinyl acetate.

Musk xylol is very cheap, but a little of the ambrette goes further and is less apt to crystallize out. The flowery tone should develop fully after maturing in the soap for a week or two, an effect brought out by the use of a very little patchouli, vetivert, sandalwood oil, or artificial civet. Crude violet ketone acts in the same way and harmonizes with most perfume substances.

As many of the more expensive appropriate essential oils are selected as is compatible with cost, backed up with the reliable essential oils mentioned for odor development. Strong synthetics, present in too high a concentration, usually develop an unpleasant odor later; they are therefore used with caution. An approximate graduated scale of intensity values from the strongest to the weakest is: *Para*-cresyl methyl ether, amyl cinnamic aldehyde, methyl acetophenone, methyl salicylate, amyl salicylate, safrole, cinnamic aldehyde, bromstyrol, methyl benzoate, benzaldehyde, eugenol, bornyl acetate, phenyl acetic acid, diphenyl oxide, nerolins, coumarin, anisic aldehyde, benzyl acetate, vanillin, citral, heliotropin, ionones, terpineol, terpinyl acetate, linalyl acetate, musks artificial, isoeugenol, phenylethyl alcohol, linalol, geraniol, cinnamic alcohol, citronellol. *Perfumery and Essential Oil Record* **31,** 326-7 (1940).

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Sulfonated detergents are prepared by treating a halogen-substituted olefin with a strong acidic sulfonating agent. This is diluted with water and boiled, then treated with a strong alkali to yield the detergent product. Colgate-Palmolive-Peet Co. Canadian Patent No. 392,595.

Nature of Soap Solutions

A new theory is offered as to the composition of dilute soap solutions. A very dilute solution hydrolyzes into simple sodium cations and simple fatty acid anions. As the concentration increases changes in composition occur in stepwise stages, each stage marking a level at which equilibrium in the hydrolysis exists over a range. The next step above simple ionization, corresponding to increased concentration, is the formation of fatty acid soap in which one molecule of soap is combined with one fatty acid ion. In the next stage of liquid crystals two molecules of soap are combined with one molecule of fatty acid and x molecules of water. When the acid soap precipitates the degree of hydrolysis increases.

In the steps in which multiple anions are formed of 4 to 8 simpler units, these appear in colloidal form, but bear charges due to hydrolysis. According to the new theory the double ions hydrolyze more easily than the single ions of the simple soap electrolyte, and the more highly associated ions hydrolyze more easily than the double ions. The hydrolysis curve becomes a series of steps, the length of these being dependent on a number of factors including temperature. P. Ekwall. *Kolloid Z.* **92,** 141-57 (1940).

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Chromatographic Analysis

Chromatographic analysis consists in slowly running a solution of the material under examination through a long vertical tube filled with a special adsorbent material such as hydrated aluminum oxide. Using a suitable adsorbent and otherwise adjusting the conditions it is often possible to isolate various components of the mixture at different levels throughout the tube. In some cases one component will remain in solution while another is completely adsorbed.

Results of the greatest interest have been secured in this way in the examination of mixtures of vegetable fatty acids. Thus a solution in benzene of equal parts of stearic acid and myristic acid was entirely deprived of the stearic acid when passed through a tube filled with activated alumina, the filtrate consisting of a pure solution of myristic acid. On replacing alumina by silica gel, the myristic acid underwent preferential adsorption while the filtrate became richer in stearic acid.

Although a single run through the column does not always result in sharp separation, several runs will often bring about substantially complete separation. This proved to be the case with a solution containing equal parts of oleic and erucic acids, a single run leaving most of the erucic acid in the adsorbing column, while by far the greater part of the oleic acid was found in the filtrate. Repeated passage of the filtrate through a column of adsorbent then yielded a solution of pure oleic acid. This acid also appears in the filtrate in pure form after treating a mixture with palmitic acid in a column of activated alumina.

The principle of chromatographic adsorption will undoubtedly be exploited to an increasing extent in analytical laboratories, but it is doubtful whether it can be usefully applied to the large-scale separation of fatty acids. The chief obstacle is the enormous bulk of adsorbent relative to the amount of acid that can be treated in a single operation. *Manufacturing Chemist* **11,** 118-19 (1940).

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Analysis of Fats and Oils

The Committee on Analysis of Commercial Fats and Oils of the American Chemical Society has reported the results of its investigation of six methods and recommended their adoption. These are the titer, the modified Gardner break test, the detection of tristearin in lard, the Villavecchia test for sesame oil, calculations of the hydroxyl value, and the smoke, flash, and fire points. Many data have been collected in the study of these methods, which has extended over a period of 2-3 years.

In determining titer the committee has approved vetical stirring. The advantages over horizontal stirring are that it gives a sharper end point, is more convenient, and can easily be made mechanical by adapting a suitable motor and coupling arrangement to the stirrer. Specifications for a new thermometer are for one reading from 0° to 150° C. The committee has found that a differential temperature of 10° C. between the titer point and the bath is insufficient for low titers, and recommends that this be increased to 15-20°. Exact details are given for all six determinations, with diagrams of apparatus for determining smoke point and for determining the titer of fatty acids. A.C.S. Committee, V. C. Mehlenbacher, Chairman. *Ind. Eng. Chem.*, Anal. Ed. **12,** 379-84 (1940).

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Stabilizing Soap

A soap relatively free from metals such as iron, manganese and copper which tend to promote deterioration of the soap, is made by saponifying a suitable fatty material with an aqueous caustic soda solution containing sensible quantities of such metals, in the presence of a commensurate quantity of a sulfur compound such as sodium thiosulfate. The latter forms compounds with the metals that are relatively innocuous to the soap and relatively insoluble. L. B. Hitchcock and R. E. Divine, to Hooker Electrochemical Co. U. S. Patent No. 2,202,103; through *Chem. Abs.*

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Wijs Iodine Method

Although the Wijs iodine method gives consistent results, the values obtained are in general lower than the theoretical unsaturation as measured by the hydrogen value. A careful study, using the official methods of the American Oil Chemists' Society, showed that these methods give results on the unsaturated acids and esters of the oleic series that lie very close to 98.8 per cent of the theoretical unsaturation. The reliability of the method is even greater than is generally supposed. Corrections should be applied when the iodine value is to be used as a measure of the purity of a compound. J. W. McCutcheon. *Ind. Eng. Chem.*, Anal. Ed. **12,** 465 (1940).

Soap Milling

MILLING is an important operation in soap manufacture. involving mixing of the dried chips, their passage through the mill and the subsequent compression to bar form for cutting and stamping. Milling has gained greater prominence of late years due to the increased use of soap made from a chip base.

Recently there has been some return to frame cooling away from the use of chilled rollers in England, the reason being that the supposed prevention of rancidity by sudden chilling in an air blast,—when free alkali is converted to carbonate,—leads instead to increased sourness. Frame cooling is said to provide a better and more reliable product. If the chips are used from the dryer for milling, the moisture will be uniform and the soap will work well throughout, providing the base is not faulty. If stored for long periods overdried portions may lead to gritty products.

Chips should be of uniform consistency and not too moist, containing a maximum of 14-15 per cent of water and a minimum of about 10 per cent. Each passage through a modern 3-roll mill involves an average loss of 0.3 per cent of water. With the old granite rolls, the heat generated increased the loss of water appreciably. If it is thought that too much water may be lost, chipped undried base is kept at hand, or neutral white soft soap. Water addition is bad practice as it holds up the grip and requires extra milling. Overmilling produces transparency. A perfectly milled soap should, when issued from the plodder, give a bending or screwing action without showing any sign of scaling or cracking. The milled ribbons should pass to the plodder immediately to avoid drying and chilling. The water-cooled rolls of the milling machine should not be overcooled by the too rapid passage of water; the soap should be slightly warm on leaving the mill, for if too cold, there will be difficulties in compressing it.

Many firms make a variety of toilet soaps of different perfumes and colors, and therefore find it convenient to have two mills lined up as two separate units, one used entirely for white soap and the other for a selected color for the day's run and any oddments. For the diamond-shaped flakes, for curls, etc., special attachments in the form of serrated knives, spiral cutters and steel scrapers are available for the milling machines. Many individual advantages are claimed by the manufacturers of the various types of mills. *Perfumery and Essential Oil Record* **31,** 324-5 (1940).

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Toilet Soap Detergency

Ten varieties of toilet soaps were studied as to a number of properties. Eight of these gave pH values in 0.25 per cent solution at 25° C. of 10.1-10.5; two gave 9.4 and 8.8, respectively. Obviously the last two contained salts giving low pH values. Tests on foaming power, and on detergency as measured by ability to remove soil made of 5 per cent lamp black in tallow, showed that the formation of copious suds has little relationship to ability to remove the type of soil described. B. L. Holiday, E. A. Kelly and L. W. Rising. *J. Am. Pharm. Assoc.* **29,** 367-9 (1940).

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Moisture in Soap

Most of the methods for determining moisture in soap are long and tedious. A rapid method of reasonable accuracy is carried out as follows: A representative sample of soap chips or shavings is taken and 100 grams of this ground into 300-400 particles. Final grinding should be such that 1 gram contains about 100 particles. Of this, 1 gram samples are weighed in wide-mouth basks and dried in an oven rapidly enough so that all of the water is driven off in about an hour's time. At 120° C. a quick drying occurred without the sample turning brown or giving off a burnt odor. The soap is removed from the oven, cooled in a desiccator for a half hour and weighed. Four duplicate determinations on a soap containing about 16 per cent of water showed the method to be accurate, the difference between determinations being a fraction of a percent. The dried samples are suitable for the further determination of total fatty acids, loss on ignition, etc. by the usual methods. J. Metzner. *Fette und Seifen* **47,** 356-8 (1940).

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Pine Seed Oil

The seeds of the pine tree contain kernels very rich in fat. The tree, *Pinus Pinea L.* grows in America, north Africa, Central China and other parts of the world. The cones ripen in their fourth year. The white kernels of the fruit have a sweet, almond-like taste. The kernel has been found by one investigator to contain over 50 per cent of fat, the fatty acids consisting of 5 per cent of stearic acid and 95 per cent of oleic acid. A sample of oil examined by another investigator showed a content of about 50 per cent of oleic acid, 45 of linoleic acid, and 5 per cent of solid fatty acids. Three observers give a saponification number of 192-3. Italian pine-seed oil contained about 49 per cent of linoleic acid, 37 of oleic, and 9 per cent of solid fatty acids. H. P. Kaufmann and Fu-Ying Liu. *Fette und Seifen* **47,** 409 (1940).

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Neroli Soap Odors

Neroli type odors for perfuming 100 kg. of soap each are made from the following combinations:

1.	Petitgrain oil, Paraguay ..	150 g.
	Geranium oil, Africa	100
	Palmarosa oil	75
	Xylol musk, 100%	65
	Beta-Ionone	60
	Lemongrass oil, crude	35
	Benzaldehyde, 100%	15
2.	Petitgrain oil, Paraguay ..	125 g.
	Phenylethyl alcohol	100
	Terpinyl acetate	100
	Bergamot oil	50
	Palmarosa oil	40
	Methylnaphthyl ketone ...	25
	Xylol musk, 100%	25
	Amyl salicylate	25
	Tolyl aldehyde, 100%	10

Fritz Schulz. *Seifensieder-Ztg.* **67,** 416 (1940).

Casein Soap Filler

A toilet soap having good detergent qualities is obtained by saponifying a mixture of oleic and myristic acids, and incorporating into the mixture a protective colloid of acid or neutral character such as solubilized casein. The addition to the soap of weak acids or of acid salts does not cause the decomposition of the soap. The solubilized casein can be prepared according to French Patent No. 820,781. An example is a soap obtained by saponifying a mixture of 50 parts of oleic acid and 50 of myristic acid with an equivalent quantity of caustic soda and adding 0.5-1 per cent of solubilized casein. Société des savons francais. French Patent No. 844,500.

Continuous Fat Splitting

A method for the continuous splitting of oils and fats into fatty acids and glycerine consists in passing the initial mixture of oil, water and a catalyst such as zinc oxide or magnesium oxide, successively through many chambers. The splitting rate is increased gradually in the successive chambers by circulating in each stage of operation a quantity of substance which is many times as large as that which is introduced on one side and evacuated on the other side. Metallgesellschaft A.-G. French Patent No. 844,687.

Soap Conductivity

The influence on the conductivity of soap solutions of the length of the carbon chain and of a presence of cresols was studied with sodium and potassium stearates and palmitates, and the three isomeric cresols. Cresols present in soap solutions cause an increase in the dispersion of the soap and some increase in conductivity. The various relationships are shown by a number of curves for the four kinds of soaps, at different concentrations and different temperatures. Viscosity measurements were also made and studied in relation to conductivity measurements. The curves show that the particles which affect the viscosity of the solutions are different from those which affect their conductivity. The conclusions drawn were that an outer solvation occurs with orientation of permanent dipoles in the electric fields of colloidal ions, and an inner solvation accompanied by swelling of electrically neutral or very faintly charged colloidal particles. E. Angelescu and A. Woinarosky. *Kolloid-Z.* **92,** 355-61 (1940).

Fatty-acid Distillation

A closer separation of fatty acids is obtained by passing the fatty-acid stock through a heating zone to heat it to the temperature of vaporization. The heated stock goes to a fractionating zone, the vapors pass in contact with a reflux, the overhead free fatty acid vapors are condensed from the fractionating zone, and fatty acids of intermediate boiling range are withdrawn. Dark-colored fatty acids obtained by the Twitchell process from cottonseed oil were separated into fractions consisting mainly of palmitic acid, linoleic acid, and oleic acid respectively. Foster Wheeler Corp. British Patent No. 523,910; through *The Chem. Trade J. & Chem. Engineer* **107,** 175 (1940).

Fatty Acid Determination

A rapid method for the determination of fatty acids in soap is based on neutralization with sodium hydroxide solution and sodium carbonate and decomposition of sodium salts of fatty acids by titration with hydrochloric acid in the presence of kerosene. Organic acids in solution are titrated with sodium hydroxide solution. Hydrolysis of the soap is prevented by adding neutral 96 per cent alcohol. Kerosene is freed from any organic acids by shaking with sodium hydroxide and washing to a neutral reaction.

Dissolve 5 grams of soap in 40-50 cc. of water, add to the hot solution 15 cc. of kerosene and 2-3 drops of 0.02 per cent methyl orange and titrate, with vigorous shaking, with 0.5 *Normal* hydrochloric acid. Introduce 90 cc. of alcohol and 15-16 drops of 1 per cent phenolphthalein and titrate with 0.5 *Normal* sodium hydroxide solution as above. S. Semenov and M. Zaliopo. *Masloboino Zhirovoe Delo* **16,** No. 2, 22-3 (1940); through *Chem. Abs.*

Sulfonate Soap

A compound such as triethanolamine sulfonate is used as an oil-emulsifying agent, or in small proportions for improving the emulsifying capacity of various oil-soluble sodium sulfonates. Karl T. Steik, to Standard Oil Development Co. U. S. Patent No. 2,204,326; through *Chem. Abs.*

French Grape-seed Oil

Special centers are to be set up in unoccupied France for the distribution of grape seeds to be made into oil and soap. France and Algeria can supply 10 million kilos of oil, half of which would be refined for consumption and half turned into soap. The chief problem is to separate the seeds from the skins. The French Ministry of Agriculture is to open regional warehouses which will buy from the wine growers at a fixed price and sell the product to recognized firms. *Chem. Age* **43,** 207 (1940).

Oil Analysis

A method of oil analysis was developed using small amounts (2-5 grams) of known mixtures of the methyl esters of saturated acids. The composition was determined by careful distillation through a spinning-band column. A known mixture of methyl laurate, methyl myristate, and methyl palmitate was separated with an accuracy to a fraction of a per cent on the first fractionation. With a mixture of methyl myristate, methyl palmitate, and methyl stearate, it was difficult to obtain a flat for the methyl palmitate. Separation was accurate to 1-5 per cent for the ,3 fractions. In oil analysis where only small quantities of the acids are available this method offers for the first time a convenient and fairly accurate procedure. Flavius W. Wyman and Chas. Barkenbus. *Ind. Eng. Chem.*, Anal. Ed. **12,** 658-61 (1940).

PRODUCTS AND PROCESSES

Silicate Preparation

Silicate detergents having a pH value approximately equal to that of a detergent prepared from two molecules of sodium carbonate to one molecule of silica are obtained by using larger proportions of sodium carbonate to silica, namely, 2.5-4 molecules of sodium carbonate to one molecule of silica. The advantage of the increased proportion of sodium carbonate is in the lower temperature of fusion of the mass, so that the process can be conducted at a lower temperature. The reaction can be completed before a fully fused mass is formed, which saves cost in grinding the product. B. Laporte, Ltd. and Isaac E. Weber. British Patent Spec. 525.514.

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Washing Agent

A washing agent consists of 100 parts of a detergent which is stable against compounds causing the hardness of water, about 10 parts of a water-soluble salt of a polymeric carboxylic acid, and about 10 parts of a water-soluble salt of a phosphoric acid. Karl Pauser and George Schulz. Canadian Patent No. 392,-688.

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Transparent Soap

If transparent soaps are to be made without glycerine and alcohol, then sugar must be used, and if possible, a proportion of castor oil or its fatty acids. These soaps require a long period of storage in order to develop their transparency. A possible defect may be sweating, especially with marked temperature changes, and formation of a crystalline coating of filling agents which come to the surface. If glycerine, sugar and castor oil are to be omitted from the formula then alcohol must be used. Denatured alcohol can be employed if pyridine bases are absent; soap as a denaturant naturally does no harm. A formula for a transparent soap without glycerine, sugar and castor oil is: 50 kg. coconut oil fatty acids, 40 kg. tallow fatty acids, 20 kg. distilled vegetable oil fatty acids, about 56 kg. 38° Be. caustic soda, 52 kg. denatured alcohol, 2.4 kg. potash, 3.2 kg. comomn salt, 2 kg. sodium nitrate, 1.6 kg. calcined soda ash, 44.8 kg. water,—total 272.5 kg. Careful adjustment to neutrality and formulation at a low temperature are very important in producing the desired clarity. *Seifensieder-Ztg.* **67,** 424 (1940).

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Pectin in Italian Soaps

A colloidal pectin preparation prepared from oranges is said to be used to advantage in soaps and washing products. Liquid soap: 50-60 per cent soap, 22.5 per cent pectin and 27.5 per cent of 38° Be. sodium silicate solution. Paste soap: 20 kg. tallow fatty acids, 20 kg. olive oil fatty acids, 20 kg. palm oil fatty acids, 27 kg. 38° Be. caustic soda, 45 kg. pectin, 15 kg. water, and 55 kg. of bentonite or sodium silicate. Shaving soaps and toilet soaps are improved by the addition of the pectin preparation, as it has a desirable effect on the skin. *Olii-Grassi-Saponi* **6,** No. 6, 103-5 (1940); through *Fette und Seifen* **47,** 429 (1940).

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Pectin as Soap Filler

The pectin preparation used in Italy for reducing the fatty-acid content of soaps contains cellulose impurities which may cause trouble in the processing of the soap and which will darken on reaction with alkali, so that the soap must be carefully adjusted before the pectin is added. Soaps made with the Italian pectin are said to be dark colored, to turn rancid readily, and to wash away very quickly. The Italian recommendation is to replace 10 per cent of fatty acid with 1 per cent of dry pectin product, diluting it to 10 parts with water. Purchase of this would be uneconomical for Germany because of the high price of the material. The recommendation is that pectin be processed from natural products in Germany and used experimentally in soap in as pure a state as possible; under proper conditions it may be found to be useful in replacing fatty acids in soap. F. Wittka. *Seifensieder-Ztg.* **67,** 407-8 (1940).

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Sulfonate Compounds

Naphthenic sulfonates in which the sulfonate groups are attached directly to the ring structure, are easily soluble, readily crystallized and show exceptional capillary-active properties, in contrast to alkyl sulfonates of similar molecular weight. Sulfonates which possess a cyclopentane ring substituted by a short aliphatic side chain, are especially active. Derivatives of cyclopentane are more active than those of cyclohexane. Naphthenic sulfonates prepared from naphthenic acids by replacement of the carboxyl group by $—CH_2SO_3Na$, constitute a new class of materials whose activity notably exceeds that of the technically known capillary-active substances. N. Turkiewicz. *Kolloid-Z.* **92,** 208-17 (1940).

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Palm Kernel Soaps

Palm kernel oil should not be present in soap to the extent of more than 25 per cent. The oil should be bleached with Fuller' earth at 100° C. under a vacuum. It is best saponified by itself with the calculated amount of caustic soda and fitted in the usual way to form a yellow soap. This is then mixed with a soft soap made by saponifying a blend of oils with caustic potash. The mixed soap is then run into the frames for cooling. The amount of potash soap used should be such as to give the correct degree of hardness and the proper texture. Paul I. Smith. *Am. Perfumer,* Nov. 1940.

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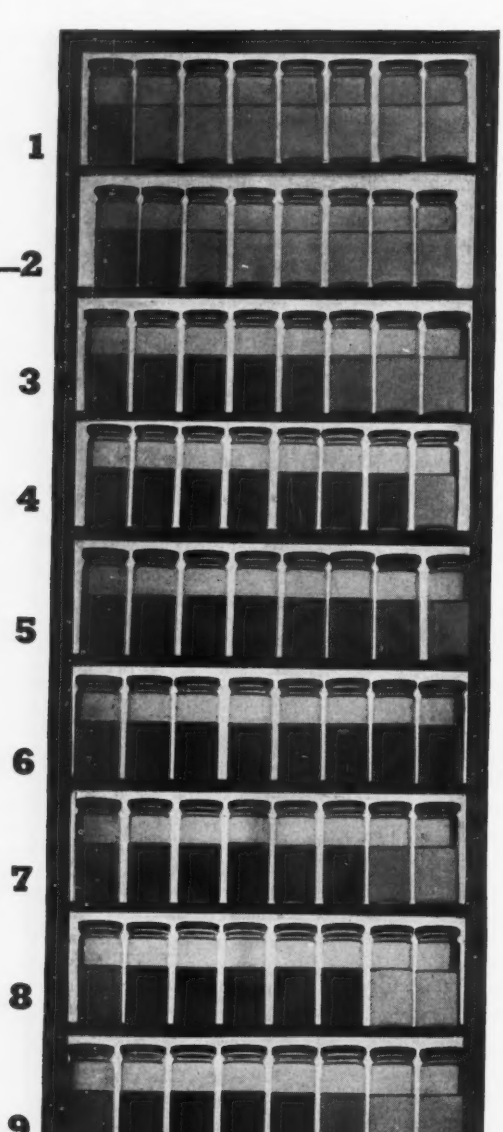

% Concentration 0 .01 .05 .10 .20 .30 .50 1.0%

1. Caustic Soda
2. Soda Ash
3. Sodium Sesquisilicate
4. Sodium Metasilicate
5. Sodium Silicate (Ratio 1:2)
6. Sodium Silicate (Ratio 1:3.22)
7. Hexametaphosphate
8. Tetrasodium Pyrophosphate
9. Sodium Tetraphosphate

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No. 2,220,980, Parasiticide, patented November 12, 1940 by William P. ter Horst, Packanack Lake, N. J., assignor to United States Rubber Co., New York. A parasiticide preparation containing as an active constituent, 2, 5-dimethyl pyrrole.

No. 2,220,981, Fungicide, patented November 12, 1940 by William P. ter Horst, Packanack Lake, N. J., assignor to United States States Rubber Co., New York. A fungicide preparation containing as an active constituent a mono - hydroxy - diphenylamine in which the hydroxyl hydrogen atom is replaced by an acidyl group. A fungicide preparation containing as an active constituent a mono-hydroxydiphenyl-amine in which the hydroxyl hydrogen atom is replaced by a boric acid residue.

No. 2,221,333, Stabilized Soap, patented November 12, 1940 by Robert L. Sibley, Nitro, W. Virginia, assignor to Monsanto Chemical Co., St. Louis. A soap comprising a water soluble salt of a higher fatty acid stabilized against deterioration and development of rancidity by having incorporated therein more than 0.01 per cent of a mono aryl substituted biguanide.

No. 2,221,772, Insecticidal and Fungicidal Oil, patented November 19, 1940 by Frank App, Bridgeton, N. J. An insecticidal and fungicidal horticultural spray that comprises an unemulsified mineral oil having approximately the following characteristics: Saybolt viscosity at 100°F. 32 to 50 Boiling range, degrees F. 290 to 750 Unsulphonatable residue, per cent ..... 85 to 96

No. 2,222,109, Horticultural Spray Oil, patented November 19, 1940 by Frank F. Lindstaedt, Oakland, Calif. An oleaginous produce adapted for mixing with water for producing a horticultural spray emulsion comprising, a hydrocarbon oil, a nitrophenol, a fish oil intermediate solvent for said nitrophenol and said hydrocarbon oil, and an emulsifying agent.

No. 2,222,486, Insecticide, patented November 19, 1940 by William Moore, Cos Cob, Conn., assignor to American Cyanamid Co., New York. An insecticidal composition for soft bodied insects and allied pests including a dinitro dialkyl phenol or a salt thereof. An insecticidal composition for soft bodied insects and allied pests including a dinitro diamyl phenol or a salt thereof.

No. 2,222,968, Insecticidal Composition, patented November 26, 1940 by George L. Hockenyos, Springfield, Ill., assignor to Monsanto Chemical Co., St. Louis. A reaction product of nicotine and a benzene hydrocarbon having a hydroxyl radical substituent joined directly to the benzene nucleus and having at least one additional substituent consisting of a radical selected from the group consisting of the cyclohexyl radical and alkyl radicals containing at least four carbon atoms, said product, when present in an oil-water emulsion, remaining substantially entirely in the oil phase and being substantially absent from the water phase.

No. 2,223,142, Fungicidal Preparation, patented November 26, 1940 by Clarence L. Weirich, Westport, Conn., assignor to C. B. Dolge Co., Westport, Conn. A fungicidal composition for the prophylaxis of athlete's foot comprising para - nitrophenol, water and a water soluble inorganic salt which is chemically non-reactive with said para-nitrophenol, said salt enhancing the fungicidal properties of said para-nitrophenol, the said salt and water being present in the composition in such proportions as to produce an aqueous solution of said salt of at least two and one-half per cent concentration, and the proportion of said salt in the composition greatly exceeding the proportion of said para-nitrophenol.

Acid-Resistant Linings

A ceramic lining of acid-resistant cement and waterglass proved to be as efficient a protection in apparatus used for the hydrogenation of fats as it had already proved in apparatus for the hydrolysis of fats. A. Dymshits. *Masloboino Zhirovoe Delo* **16,** No. 1, 32-3 (1940).

Conductivity of Soap

Conductivity measurements were made with solutions of sodium and potassium palmitates and stearates. With a change in the concentration of sodium stearate solution from 0.2 to 0.1 Normal an increase in molecular conductivity was observed which could not be explained by an increase in the degree of dissociation. With palmitate the molecular conductivity is almost independent of concentration, and at high temperatures a slight decrease in conductivity was observed with dilution. Addition of cresol to soap produces a maximum conductivity as a function of cresol concentration. The form of the curve is independent of the particular soap used, of its concentration and of the temperature, but the increase of conductivity is more rapid, the more marked the colloidal character of the soap. This is a continuation of work previously reported. E. Angelescu and A. Woinarosky. *Kolloid-Z.* **92,** 99105 (1940).

Manufacture of Triolein

Triolein and trilinolein can be prepared by the direct esterification of the fatty acids with glycerin in an atmosphere of nitrogen, with the aid of *para*-toluene sulfonic acid as catalyst. H. Fiedler. *Fette und Seifen* **47,** 300-301 (1940).

Detergent Addition

The wetting power of various classes of detergents including soap is increased by the addition of aliphatic alcohols containing 8-11 carbon atoms. Böhme Fettchemie G.m.b.H. French Patent No. 843,583.

Colored Soap Wrappers

Soap cakes are wrapped with paper containing a filler such as calcium sulfate in an amount sufficient to prevent discoloration of the wrapper by alkali in the soap. L. W. Strattner, to West Virginia Pulp and Paper Co. U. S. Patent No. 2.206.829.

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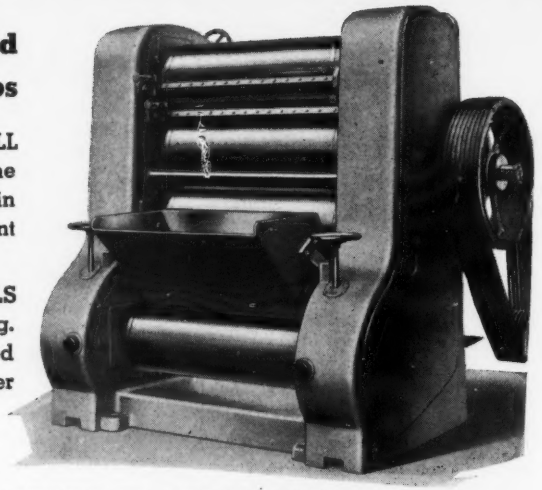

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IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

773—Soap Mills and Plodders

A new five-roller soap mill, recently developed by J. M. Lehmann Co., New York, is designed for high production of exceptionally thin soap flakes of uniform character and transparency. Suitable for both soap flake and toilet soap milling, it can be used for automatic one-operation milling of toilet soap. The feed hopper is adjustable to two milling lanes. A four-roller mill of similar type is also produced by the Lehmann company.

Another machine recently improved by the company is a ruggedly constructed soap plodder for producing soap of maximum density. Features of the plodder are: a design which ensures regulated feed from hopper to compressive worm; a compressive worm operating in an efficient water jacket; a die head equipped with an electrically heated water bath; a built-in motor and drive and an aluminum alloy compressive worm.

774—Processing Equipment

J. H. Day Co., Cincinnati, has just brought out a new bulletin on its line of equipment for chemical processing of a wide variety of materials. Mixers, mills, agitators, revolving drums and gyrating screens are illustrated and described.

775—Uses for Chlorine

Electro Bleaching Gas Co. and Niagara Alkali Co., New York, have just published three articles on new applications of liquid chlorine in the latest issue of *The Pioneer*. One article covers the development of chlorine disinfected playground sand by the department of parks, City of New York; another deals with the use of chlorine in antiseptic wall paints, while a third tells how textile wetting, dispersing and penetrating agents may be improved by a new process using chlorine.

776—Pyrethrum Extract Folder

Dodge & Olcott Co., New York, is currently distributing a folder describing "D & O Pyrethrum No. 20 Odorless," a new product of the company manufactured by a cold process which is said to produce a concentrate of superior clarity, better color, less odor, greater stability and increased killing power and knockdown. Other D. & O. concentrates are also described.

777—Silicates in Soap

"PQ Silicates of Soda in Soap Making," an 8-page booklet, is now being distributed to the trade by Philadelphia Quartz Co., Philadelphia. The advantages of using silicates in soap formulation are listed as well as the effect on the soap itself and methods of modifying soap formulas when silicates are used in making boiled soaps, cold process soaps and semi-boiled soaps. Copies are available.

778—Solution Control

A meter known as the "Solu-Bridge" for instantaneously measuring the strength of wash water solutions in bottling plants, etc., has just been put on the market by Industrial Instruments, Inc., Jersey City, N. J. Said to operate on the principle of the Wheatstone Bridge using a "magic eye" as an indicator of bridge balance, the meter provides an immediate check on the concentration of any given washing or other solution in terms of free caustic content. Use of the instrument, it is claimed, results in improved washing efficiency as well as substantial savings in materials and labor.

779—Tank Cars for Caustic

A folder describing the new Columbia fleet of caustic soda tank cars, recently mailed to the trade by Columbia Chemical division of Pittsburgh Plate Glass Co., New York, tells of the improved construction of the cars to prevent contamination in transit. The interiors of the cars, it is brought out, are completely welded to eliminate possible leakage and are equipped with caustic resistant coatings.

780—Industrial Mixers

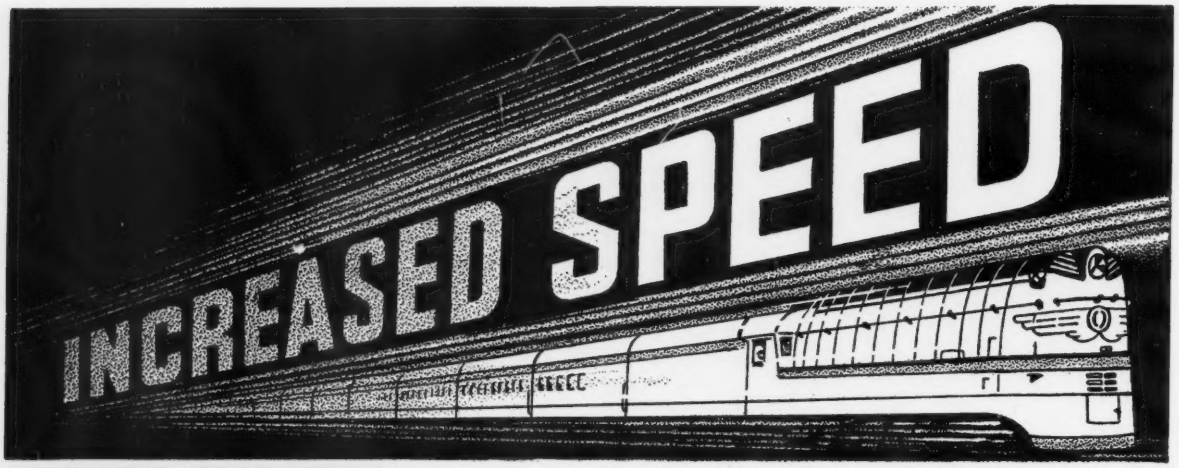
Eastern Engineering Co., New Haven, Conn., has just published a series of booklets describing its line of industrial mixers of both permanent and portable types, also laboratory stirrers, midget pumps and temperature regulators. Specifications for a wide variety of installations and blue prints of several models are included. Mixers in the company's line range from 1/100 horsepower for light work to 10 horsepower for stirring volumes of viscous liquids up to 10,000 gallons.

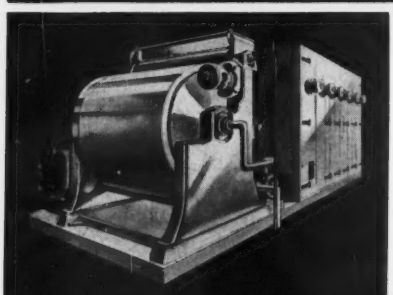
781—Mixing Machine

A new vertical mixing machine designed to accommodate eighty-five gallon bowls has just been announced by American Machine & Foundry Co., New York, in an 8-page booklet called "Flexibility in Mixing Operations." The manufacturer stresses features of variable speed, interchangeable agitators and bowls according to the type of mixing job, planetary action and flexibility for variety batch mixing. Two smaller models using 30 and 40-gallon bowls are also described.

782—Coal Tar Chemicals

Data sheets on twenty-five pure chemical compounds derived from coal tar are included in a 28-page booklet just published by the tar and chemical division of Koppers Co., Pittsburgh. Physical properties and suggested uses are given for each compound.





In producing flakes for granulated soaps, toilet cakes or packaging, high speed output can often be an item of great saving. With the New Proctor Flake Soap System, from the hot liquid soap in the kettle or crutcher to the dried flakes requires only 6 to 14 minutes and capacities may be obtained from 750 to 6000 lbs. per hour, according to flake thickness, character of soap, etc. At this stepped-up production, quicker deliveries are assured and there are tremendous savings in floor space and equipment. Complete details are contained in a new 16-page illustrated catalog, that is yours for the asking.

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They have good fastness to alkali, light, tin, ageing.

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Bright Green	Dark Brown
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A New Departure In Crutcher Performance

The HUBER ELECTRO PERFECTION CRUTCHER is now available in a new model,—with four forward and reverse speeds. The flexibility in operating technique afforded by this wider choice of crutcher speeds should be decidedly interesting to many soap makers. Available in three sizes,—1,500, 2400 and 3200 pounds.

HUBER MACHINE CO.

"Builders of Good Soap Machinery for the Past 45 Years"

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Shave Products

(*From Page* 32)

which it is merchandising its product in combination with a new style safety razor advertised as "clog-proof."

On the other hand, the main factor behind the increasing popularity of the brushless type is to be found in the modern tendency toward "streamlining," saving time and doing away with the paraphernalia of shaving brush and shaving mug, and even after-shave lotion, in some cases. One series of advertisements continues to stress the point that shaving brushes are "old-fashioned" and this campaign over a period of years has undoubtedly induced many to switch from lather-type creams to the brushless brands. Their advocates claim that the brushless type take less time to use and that the residue does not have to be washed off as carefully as in the case of the soapy types, that it can, in fact, be rubbed into the skin after shaving without danger of causing irritation as would be almost inevitable with preparations made wholly of soaps. This last advantage was mentioned most frequently by users of a product originally manufactured as a skin cream and afterward packaged as a brushless shaving cream.

Among the older generation particularly there was found, during the survey, a larger percentage of those who do not use creams of any sort, but stick to their shaving mugs, powders and sticks because they have always used them. Each new generation that grows up seems to tend toward the type of shaving preparation which is prevalently popular at the time they begin to shave.

Barbers, covered in a separate survey, were found to be as varied in their opinions as the man in the street. In this field, shaving powders appeared to be most widely used and were said to be the most economical and suitable preparation. Lather dispensers, heated and operated by electricity, as well as several other types of dispensers, seem to be popular in modern city barber shops. One electric dispenser seen in use was reported to have cost $32.50. It operated on solid cakes of soap. A year's supply for a one-chair barber shop cost about $1.50, the barber said. In a large barber shop, the head barber reported that he had tried five or six different types of lather dispensers but said that none of them had been worth the money he paid for them. This was a characteristic comment among numbers of barbers.

Hydrolysis of Fats

The hydrolysis of glycerides of stearic, palmitic and oleic acids increased in the order of tri-, di- and mono-glyceride. The difference between the reaction velocity coefficients for monostearin and tristearin was greater than for monoölein and triolein. The mixed triglycerides were hydrolyzed more rapidly than the simple triglycerides in both homogeneous and heterogeneous systems. This may be due to the difference of the emulsification value or to the affinity for alkali. *Toyoki Ono. J. Agr. Chem. Soc.* Japan **16,** 197-205 (1940); through *Chem. Abs.*

Spurge-oil Soap

Oleic acid can be replaced by oil from the spurge weed both for the oiling of mixtures and for the fulling of wool fabrics. For the production of soap from spurge oil 42 kg. of alkali are required for 300 kg. of the oil. Balter and Shaferman. *Sherstyanoe Delo* **17,** No. 8-9, 58-9; through *Chem. Abs.*

Liquid Toilet Soap

(*From Page* 29)

sary to multiply the specific gravity of any liquid by 8.3 to get the weight of the liquid in terms of pounds per gallon. A 40 per cent liquid soap therefore weighs 1.04 x 8.3 = 8.63 pounds per gallon. Dividing the total number of pounds, by pounds per gallon gives the number of gallons: $\frac{2800}{8.63}$ = 325 gallons of 40 per cent soap from 1000 pounds of coconut oil.

We now know how many pounds of oil and how many pounds of solid causic potash we need, with water added to give 325 gallons of liquid soap. But potash is always used in solution according to its Baume reading. To calculate the amount of potash in these terms the following abbreviated table taken from a handbook is useful:

Per cent KOH	*Degrees Be.*	*Pounds KOH per Gallon of Solution*
25	27.9	2.584
26	28.9	2.710
27	29.8	2.837
28	30.8	2.966
29	31.7	3.098
30	32.6	3.231
30.5	33.1	3.300
31	33.6	3.366
32	34.5	3.503
33	35.4	3.642
34	36.2	3.783
35	37.1	3.926
36	38.0	4.071
37	38.8	4.218
38	39.7	4.366
39	40.5	4.517
40	41.4	4.670

A convenient caustic solution to use is 33° Be. which the table shows to be a 30.5 per cent solution. For our problem we need to calculate how much of a 33° Be. solution will contain 260 pounds of caustic potash, which we find by dividing 260 by 3.3, the pounds of caustic potash per gallon of 33° Be. solution: $\frac{260}{3.3}$ = 79 gallons.

The complete formula in a convenient form in terms of raw materials becomes:

Formula Calculated for 40% Anhydrous Soap	
Coconut oil	1000 lb.
Caustic potash, 33° Be.	79 gal.
Water, to make a total of	325 gal.

In making up the potash solution the weight of commercial potash taken should allow for about 10 per cent of water and minor impurities. Instead of 260 pounds for 1000 pounds of coconut oil we therefore take $\frac{260}{0.9}$ = 289 pounds of commercial caustic potash, dissolve this in water and dilute to about 79 gallons, which should give a solution reading close to 33° Be.

If after the 40 per cent soap is made, it is to be diluted before sale the dilution is readily calculated by an inverse proportion, for which we will take 15 per cent as an example. Instead of calculating exactly the amount of 15 per cent soap which can be obtained, a small allowance or margin of safety should be figured of not less than 2 per cent. The proportion is:

$$\underset{\text{original soap}}{40} : 15.3 = x : \underset{\text{original volume}}{325}$$

$$x = \frac{40 \times 325}{15.3} = 850 \text{ gallon of } 15\% \text{ soap}$$

Using the figure 15.3 for the final soap concentration instead of an even 15 gives a margin of safety of 2 per cent; using the figure 15.5 gives a margin of 3.3 per cent. If the soapmaker is guaranteeing a concentration of 15 per cent of anhydrous soap he naturally wants to be on the safe side and at the same time to keep as close as possible to his guarantee so that he can figure costs accurately. Where strict chemical control is in use the margin can be reduced to 1 per cent, as the manufacturer then knows exactly how much anhydrous soap is present.

(To Be Concluded)

Are Soaps Germicidal?

(From Page 26)

anti-bacterial superiority among soaps of coconut oil soap has been reported previously[6].

Although resin soap is not a "fatty" soap and does not seem to play any important role as a detergent, its study was deemed to be interesting, in view of some previous findings[7]. Unlike in the case of household soaps which are substantially alkali salts of long-chain fatty acids, rosin soap is derived from abietic and related compounds of a rather complicated, partially saturated polycyclic structure. Its effect upon *Staph. aureus* and *Streptococcus* is decidedly noteworthy, in comparison with the much weaker action of the "fatty" soaps. It displays also some action with regard to *Eb. typhosa* and *Staph. aureus*, while for *Trichophyton rosaceum* only the highest tested concentration of twenty per cent is fungicidal. The efficacy of resin soap with respect to the pathogenic cocci referred to, is worthy of further study because of the possibility of its practical application in the formulation of soaps with enhanced antibacterial properties.

Acknowledgment: Our thanks are due to Mr. L. W. Gates of our laboratory for his valuable assistance in preparing the various stock solutions for testing.

Summary and Conclusion

The F.D.A. technic employing besides *Eb. typhosa* and *Staph. aureus* three other test organisms, viz., *Shig. paradysenteriae*, *Streptococcus* and *Trichophyton rosaceum* has been applied to a study of (a) the series of potassium soaps of homologous fatty acids, (b) a group of commercially available washing and toilet soaps, and (c) a number of "technical" soaps obtained by the saponification of fatty vegetable oils. For practical reasons, all tests were carried out at 37° C. Of the homologous series, only salts of fatty acids with eight to ten carbon atoms evidenced a germicidal efficacy of some note. Fatty acids of this description do not occur in fats and oils used in soap making. As expected, therefore, the antibacterial properties displayed by the commercial soap products tested, were not such as to entitle this kind of soap to any one of the following designations: "disinfectant", "antiseptic" or "germicidal". Thus the question posited in the title of this presentation must be answered in the negative.

Attention was called to the comparatively unusual efficacy of resin soap with respect to staphylococci and hemolytic streptococci, and to the possibility of formulation with the aid of resin of soaps with enhanced antibacterial properties, which is, however, subject to further study.

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[2] Bayliss, J. Bact. 31, 489 (1936).
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[5] Walker, J. Inf. Dis. 35, 557 (1924); 37, 181 (1925). 38, 126 (1926); J. Am. Med. Assn. 97, 19 (1931). Rasp. Zeitschr. f. Hyg. 58, 45 (1907).
[6] Schaffer and Tilly, J. Agr. Res. 41, 737 (1930).
[7] Walker, c.f. 5.

TABLE III
Technical Soaps

Minimum germicidal concentrations in 5, 10 and 15 min.

		Eb. typhosa		Shig. paradystenteriae		Staph. aureus		Streptococcus (hemol.)		Trich. rosaceum	
Potassium Soaps of:	Stock solution %	Dilutions of stock solution	% in 10 min.	Dilutions of stock solution	% in 10 min.	Dilutions of stock solution	% in 10 min.	Dilutions of stock solution	% in 10 min.	Dilutions of stock solution	% in 10 min.
Castor oil ..	M/2 17	non-germicidal	..	non-germicidal	..	*1:2 —1:2 —1:2	9	±1:1	..	non-fungicidal	
Soybean oil.	M/2 17	*1:2—1:3 —1:5	6	*1:1.5—1:2—1:3	8.5	0 —1:1 —1:1	17	*1:2 —1:2 —1:2	8.5	non-fungicidal	
Olive oil ...	M/2 17	*1:2—1:3 —1:5	6	*1:2 —1:3—1:3	6	non-germicidal	..	*1:1 —1:2 —1:2	8.5	non-fungicidal	
Coconut oil.	M/2 12	1:5—1:7 —1:10	1.7	*1:3 —1:5—1:5	2.5	non-germicidal	..	*1:1 —1:2 —1:2	6	non-fungicidal	
Linseed oil .	M/2 32	†0—0—±1:1	..	0 —1:1—1:1	32	*1:1 —1:1 —1:1	32	*1:1 —1:1.5—1:1.5	21	non-fungicidal	
Rosin	M/2 20	*1:7—1:10—1:10	2	*1:5 —1:7—1:7	3	1:15—1:20—1:20	1	1:40 —1:50 —1:50	0.4	0—1:1—1:1	20

* Stock solutions were non-germicidal in one min. except in the case of coconut oil soap against B. typhosus.
† Ineffective in 5 and 10 min., but in some tests effective in 15 min.

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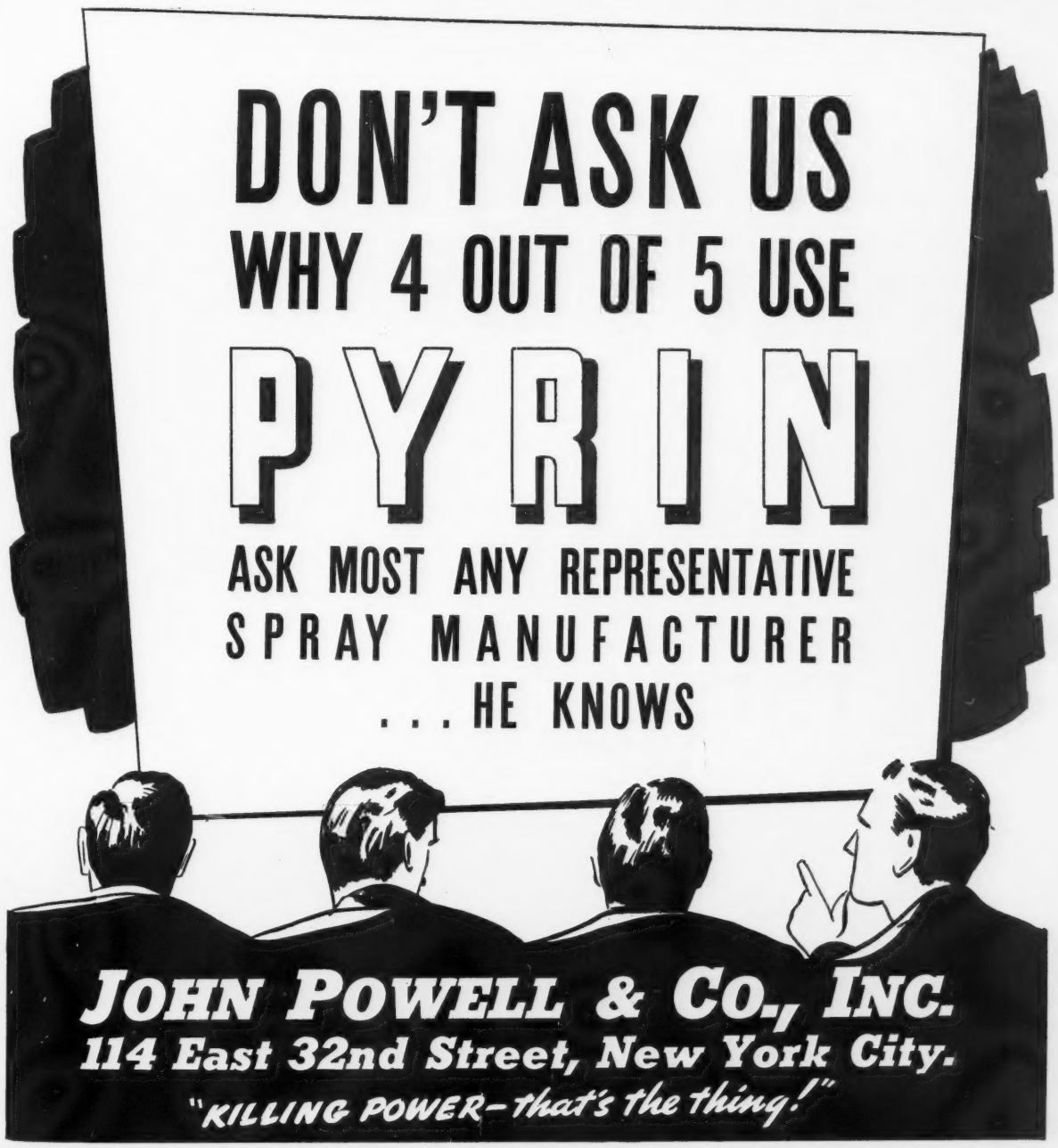
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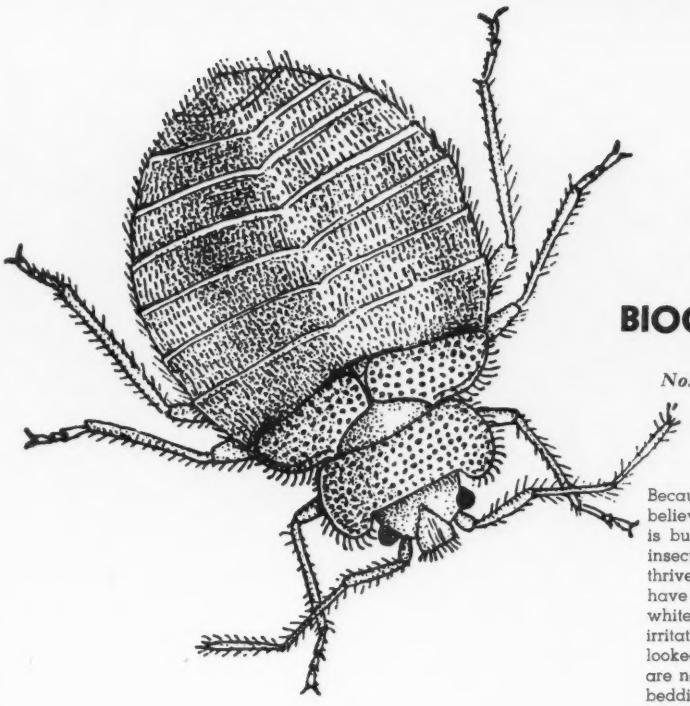

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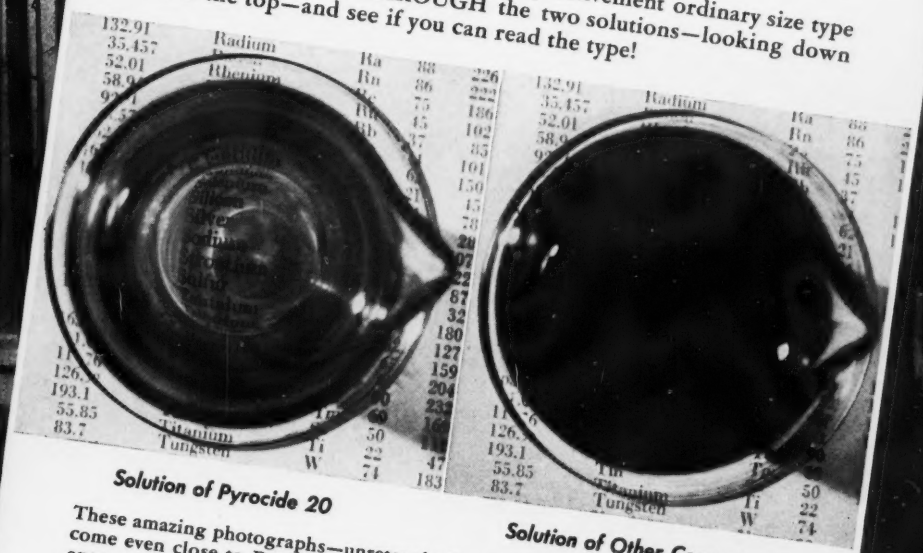
3. Place the two cylinders above any convenient ordinary size type matter. Then look THROUGH the two solutions—looking down from the top—and see if you can read the type!



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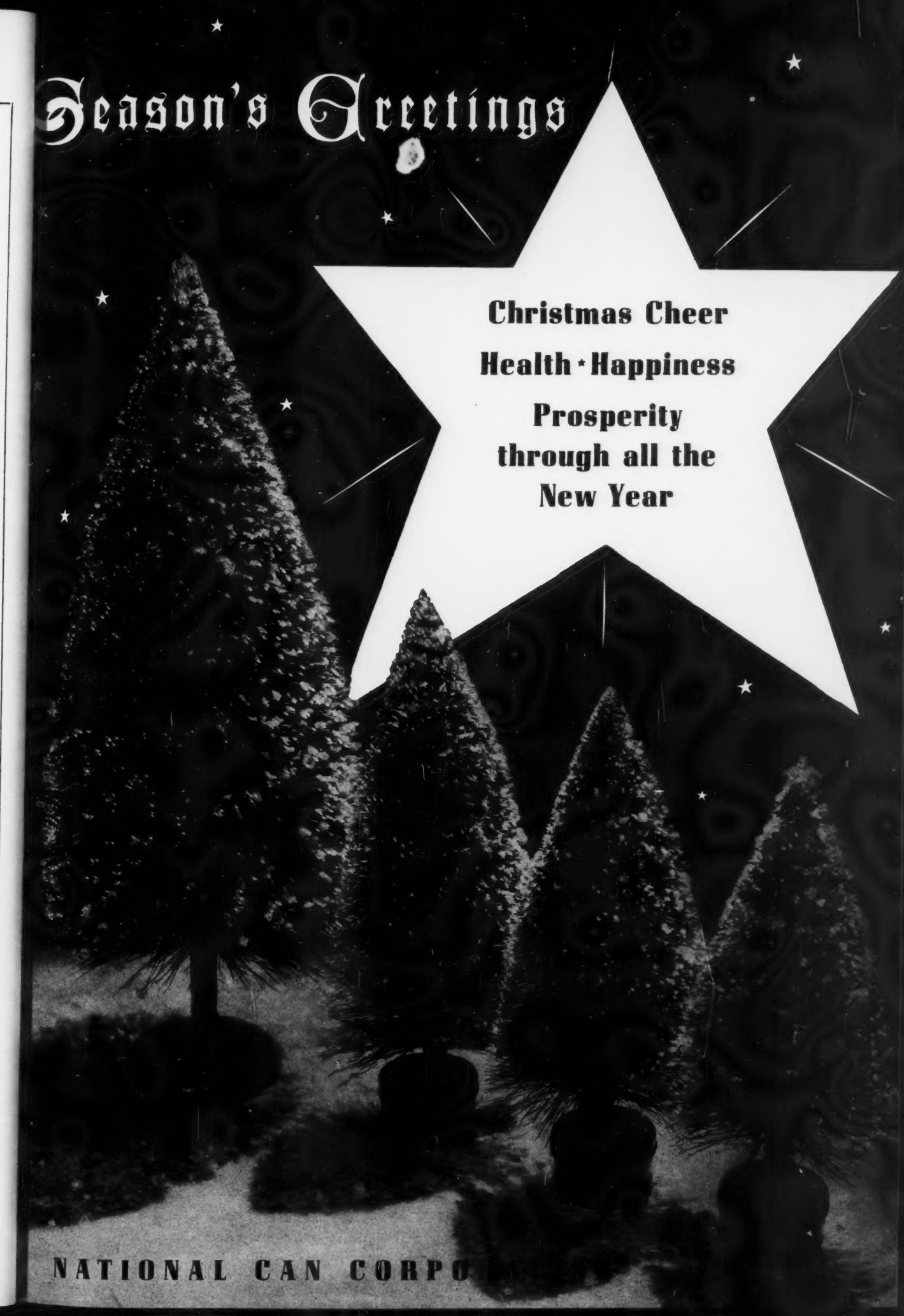
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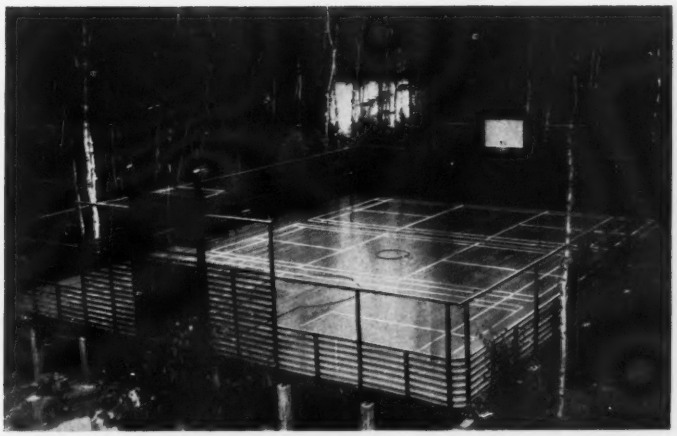

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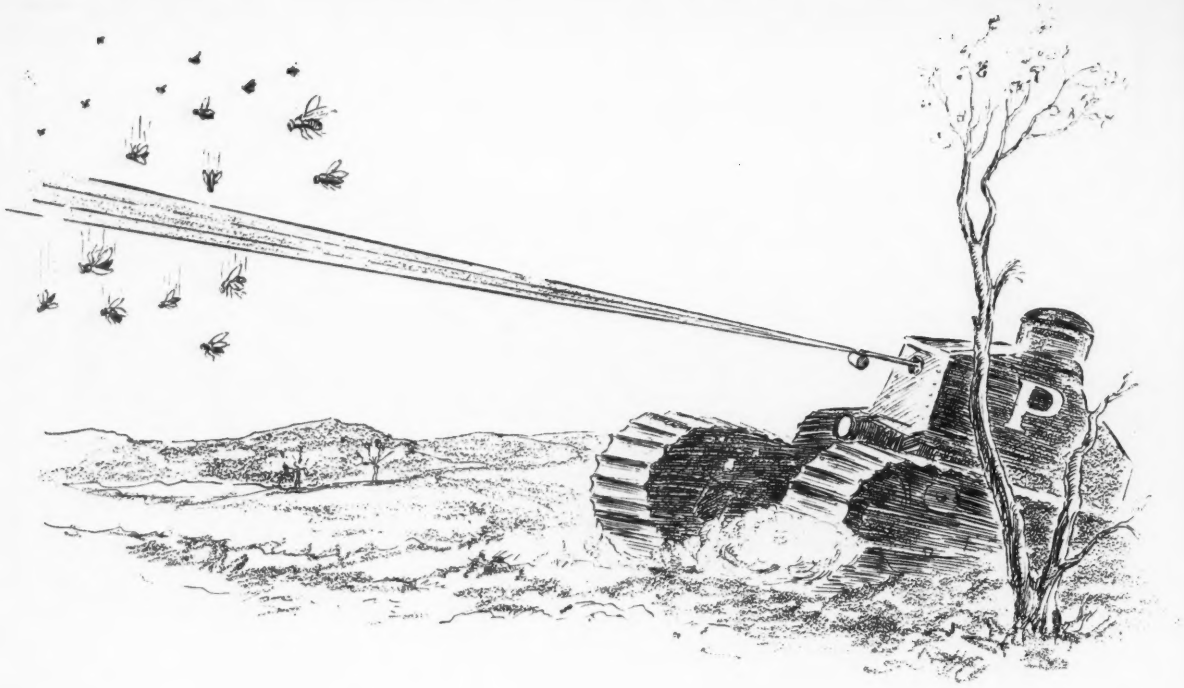


. . . speedy knockdown

is the secret of modern mechanized warfare,—and incidentally the same factor cuts a wide path in insecticide concentrate sales. The insecticide that is built to knock down the enemy insect flights "on the wing" tells a dramatic and convincing sales story that the average user can understand and remember. When he or she sprays an insecticide,—whether in the living room or in the barn—the natural expectation is to see something fall. And performance needs no explanation!

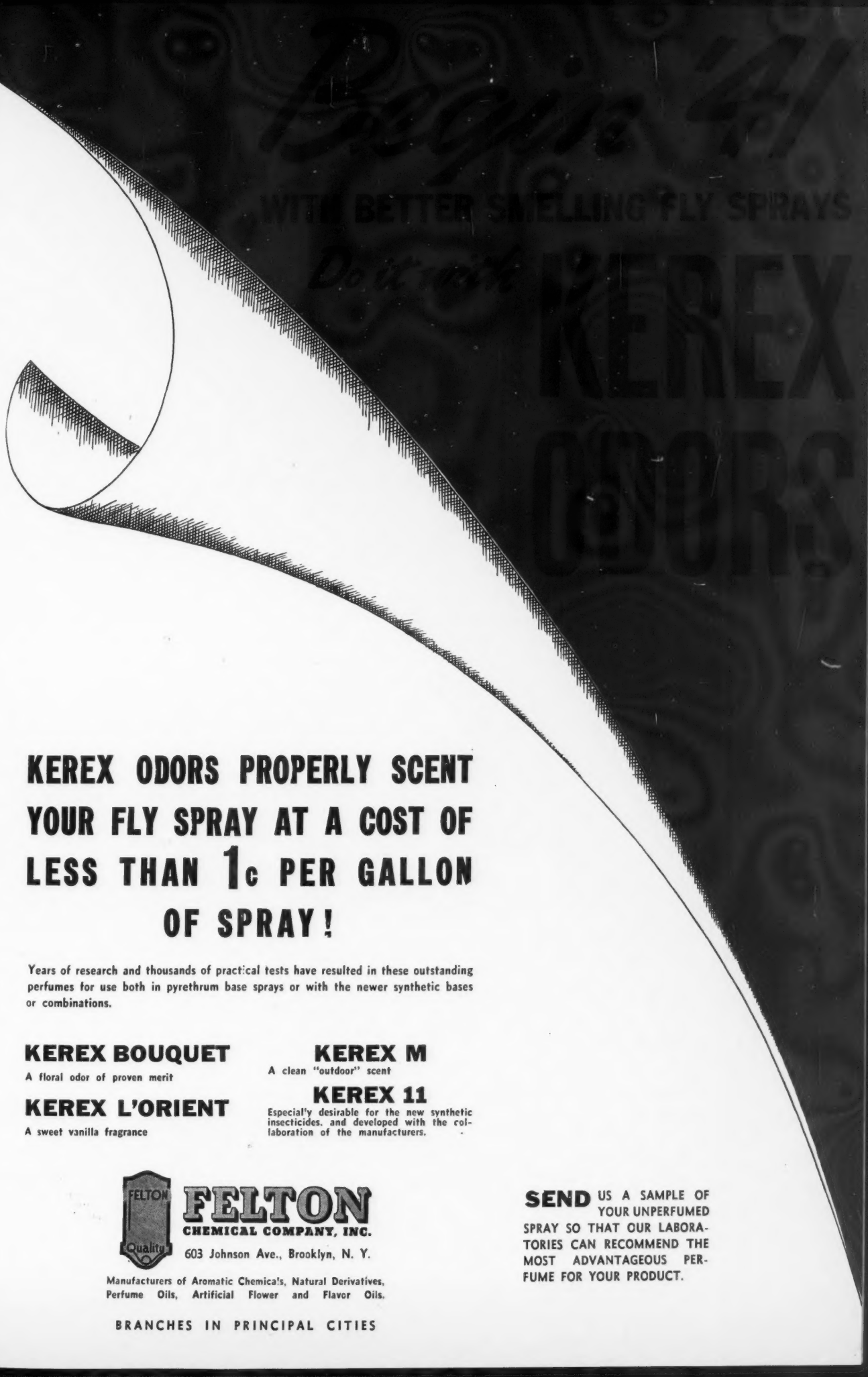
In thinking ahead to the 1941 season, remember that a good pyrethrum spray is still the best guarantee you can give the user for "speedy knockdown" Don't forfeit the dramatic sales stimulus of proved performance by economy in your formula.

CLARIFIED PYRETHRUM EXTRACT No. 20

R. J. Prentiss & Co., Inc.

New York Chicago

Cube Pyrethrum Derris



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A floral odor of proven merit

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A sweet vanilla fragrance

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A clean "outdoor" scent

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Especially desirable for the new synthetic insecticides, and developed with the collaboration of the manufacturers.

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BAIRDS

When You Order DISINFECTANTS

Specify Baird's *Certified* DISINFECTANTS!!

Certified Killing Power

Every lot of disinfectant is checked for its Germicidal value in our own and commercial laboratories. Each shipment is plainly marked with the phenol coefficient and inert ingredient statement.

Certified Uniformity

Raw materials are constantly checked for uniformity to *insure uniformity* in the finished disinfectant. Color, odor, viscosity, emulsion and strength remain constant—these disinfectants are "tops" in their field.

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To insure stability, these disinfectants are made from the finest raw materials, manufactured into finished products under expert trained supervision and tested time and time again so that you and your customers in turn get the finest germicides.

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COAL TAR DISINFECTANTS
CRESYLIC DISINFECTANTS

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SANITARY PRODUCTS SECTION OF SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

WHAT are the prospects for household insecticides in 1941? This is the question which all manufacturers would like to hear answered, particularly in view of the extremely poor 1940 season. But nobody knows the answer now. Much will depend on weather and insect conditions next spring and summer. And no matter what these conditions are, the 1940 unsold stocks of household sprays on jobbers' and dealers' shelves must first of all be moved to consumption.

If during the 1941 season, prices for household insecticides were slightly higher, it might be a stimulus to dealers to push their stocks of these materials. Likewise, this might also improve their mental attitude toward insecticides generally, an attitude which is now none too enthusiastic. On the other hand, anything resembling lower prices for household insecticides would, in our opinion, be a serious mistake coming at this time. This would not help sales and it would go a long way toward wrecking dealer confidence.

Nobody knows what kind of a year 1941 will be for insecticides. In fact, it will be another six months before we shall know anything. All we can do is wait and hope.

WITH numerous state legislatures going into session, we feel that manufacturers of insecticides, disinfectants and allied chemical specialties will see many attempts to pass distasteful legislation this year. Particularly we look for an extension of insecticide licensing and registration requirements. We also believe that the present agitation in regard to sodium fluoride poisonings may bring forth new laws in this direction. We believe likewise that the still urgent need for money in many states will see further bills introduced aimed to tax the out-of-state manufacturer.

Some laws will be written carefully and intelligently by experts who are thoroughly familiar with the conditions surrounding our industry. Others will be written with a mere smattering of knowledge and will reflect this. Unfortunately, legislators are given upon occasion to passing laws of a technical nature without the necessary careful consideration and expert opinion.

The industry can rest assured that the National Association of Insecticide and Disinfectant Manufacturers stands ready to do everything in its power to see that where new laws are adopted, that they are the right kind of laws, and that unnecessary, highly restrictive, and vicious legislation is kept off the law books of the states to as great an extent as possible.

To aid in the guidance of proper legislation during 1941 particularly within his own state should be the aim of every manufacturer. And this guidance should not take the form of blind opposition to anything and everything which tends to regulate his business, but rather it should be in the form of constructive advice to legislators. Help get the right kind of laws, if they are needed, so that you will not get the kind you do not want!

PROPOSE MARKET-SALES SURVEY a

250 attend annual meeting of National Association of Insecticide and Disinfectant Manufacturers at Hotel Roosevelt, New York, Dec. 2-3 . . . . Zick re-elected president . . . . Cowin, Eddy, Heller to board . . . . $2,500 for disinfectant research . . . . discuss insecticidal droplet size . . . . germicidal qualities of soaps . . . . to meet in Chicago in June.

PROPOSALS to study the market for disinfectants and insecticides, to record the volume of sales of these materials, and to investigate the transmission of common disease organisms were acted upon at the 27th annual convention of the National Association of Insecticide and Disinfectant Manufacturers, held at the Roosevelt Hotel, New York. Dec. 2 and 3. Other highlights of the meeting included reports on the determination of pyrethrins, droplet size of insecticides, germicidal properties of soaps, disinfectants in the national defense, and a discussion of the sanitary supply field from the consumer's viewpoint. Members and guests numbering more than 250 came from all parts of the country to attend the two-day meeting and hear papers and discussions on problems of legislation, testing methods and other subjects. The 1941 Summer meeting, on recommendation of the board of governors, will be held June 9 and 10 at the Edgewater Beach Hotel in Chicago.

All officers of the association were re-elected for the coming year after their names had been presented by a nominating committee composed of H. W. Hamilton, White Tar Co. of N. J.; W. B. Eddy, Rochester Germicide Co.; Jack Varley, Baird & McGuire, Inc.; A. W. Morrison, Socony-Vacuum Oil Co. and Fred Hoyt, Frederick Disinfectant Co. Officers for the coming year are: president, W. J. Zick, Stanco, Inc.; 1st vice-president, John N. Curlett, McCormick & Co.; 2nd vice-president, Henry A. Nelson, Chemical Supply Co.; treasurer, John Powell, John Powell & Co.; secretary, Ira P. Mac Nair, Mac Nair-Dorland Co.

Three new members of the board of governors were elected for three-year terms: R. O. Cowin, Standard Oil Co. of Ohio; W. B. Eddy, Rochester Germicide Co.; and Preston B. Heller, B. Heller & Co. The new members will replace N. J. Gothard, Sinclair Refining Co.; Dr. E. G. Thomssen, J. R. Watkins Co.; and Clarence Weirich, C. B. Dolge Co., whose terms expired.

In the president's annual address (published in the December issue of *Soap and Sanitary Chemicals*) W. J. Zick pointed out that market figures are available in many other industries but that there are no accurate data on the market for insecticides and disinfectants. He suggested that members of the association make arrangements to study the size and character of their market. This study would serve, he suggested, as a starting point for lowering the present high costs of distribution. A motion was made from the floor that a committee be appointed to look into the matter of insecticide and disinfectant marketing.

An appropriation of $2,500 to be devoted to disinfectant research was also approved at the meeting, as another approach to evaluating and expanding the industry's market. This research, to be carried out at Cornell University, is to be a practical study of the occurrence of dangerous disease organisms in common places such as on doorknobs, toilet seats, telephone receivers, in subways, etc., with a view to investigating the use of disinfectants in such places. The work will be carried out under the supervision of Dr. G. J. Hucker and W. G. Walter, who recently completed a study of dish washing. The Official Test Insecticide, Ira P. Mac Nair, of Mac Nair-Dorland Co., stated in his report as secretary of the association, will remain official until June 1, 1941. He announced that the price had been raised by the Board of Governors to $5 a dozen to members and to $6 a dozen for others. He also reviewed activities of the association on labeling of the industry's products and discussed wage rates under the Walsh-Healy Act.

Following Mr. Mac Nair's report, Mr. Zick introduced the guests at the meeting. Esler Johnson, of the San Francisco office of John Powell & Co., spoke briefly, reporting that the rumor that a Peet-Grady chamber had been acquired by the State of California was unfounded.

A feature of the first session of the meeting, presided over by W. J. Zick, was a talk by C. C. Concannon, chief of the chemical division of the

EY at 27th N.A.I.D.M. CONVENTION

U. S. Department of Commerce, reviewing developments in the markets for imported raw materials. Mr. Concannon prefaced his remarks with the reassuring statement that in his opinion no critical situations are in the offing with regard to the supply of major raw materials used in the production of disinfectants, insecticides and chemical specialties. He then reviewed the current market situation on pyrethrum, rotenone-bearing roots, red squill, coconut oil, palm oil, tung oil, alkalies, and carnauba wax, indicating that no immediate shortage of any of these materials seemed imminent.

L. A. Appley, of Socony-Vacuum Oil Co., New York, spoke on "Management on the March," emphasizing the necessity for more intelligent management in industry today. After defining management as the development of people, Mr. Appley stated that much of the bad feeling and trouble which exists today between capital and labor is the result of improper management. Trouble with unions, he said, is an outcome of unplanned and uncontrolled supervision all the way down the line. Managers should be trained to coordinate the jobs of employees and subordinates and to make their people work according to a planned structure; policies should be written to clarify the structure of the organization. Standards of performance should be established, advised Mr. Appley, and managers should be trained in analyzing and solving individual problems of their employees. In concluding, he compared the development of an employee to an investment by the company in a machine worth some $20,000 or more.

A "New Method for the Determination of Pyrethrins" was described by Dr. F. B. LaForge, of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, Washington, D. C., in a talk illustrated with slides. The new method, which appears elsewhere in this issue, was said to be comparatively rapid and accurate. It is based on cleavage of the pyrethrins by hydrogenation (using as a catalyst palladium calcium carbonate) and the subsequent quantitative separation of the products of hydrogenation.

Following Dr. LaForge's talk, a scientific approach to the problem of droplet size in relation to the effectiveness of liquid insecticides was given in a paper by Dr. E. H. Searls, of the University of Wisconsin. Dr. Searls described his researches in which it was found that within a certain range of droplet sizes, insecticides reach their highest effectiveness. Droplets larger than the optimum size are so heavy that they quickly fall out of the air stream and do not ever reach the area to be protected and consequently have little value as insecticides. On the other hand, droplets smaller than the optimum size are ineffective because of their lightness and are easily carried away on each passing draft of air and do not reach their objective. Moreover, due to their lack of momentum, the smaller droplets cannot penetrate the air film which surrounds every object and thus do not come in contact with the cow's back or whatever surface is being sprayed. An important object for this investigation was to provide a basis for the scientific adjusting of spray nozzles of insecticide sprayers so as to produce maximum effectiveness. A spray orifice used satisfactorily for one insecticide might be entirely unsatisfactory for another insecticide.

In the discussion that followed, it was brought out that Dr. Searls' comparisons of droplet size were made by measuring the size of the mark they made upon impinging on a sheet of paper. The measurements were admittedly purely arbitrary. Absolute measurements of drop size can be made, it was said, by catching the droplets in water by a special technique.

Stating that no satisfactory test had been developed previously for the testing of liquid insecticides against crawling insects, Dr. F. L. Campbell, of Ohio State University, described in detail and demonstrated the mechanism of his new test, using cockroaches as test insects. In the new test, 25 cockroaches are placed in a perforated cardboard box; the box is placed in a chamber made from two 50-pound lard tins and insecticide is sprayed into the chamber at the rate of one shot per second for a measured period of time. The chamber is allowed to stand exposed to the air for 24 hours and at the end of that time, the cockroaches are counted, being scored as number dead outside the box, number alive outside the box, number dead within the box, etc. The insecticide is rated comparatively, on the basis of its record against that of the standard.

Dr. Campbell also made the suggestion that work be done adapting the Peet-Grady chamber to use for crawling insects. He proposed that cockroaches be confined in "corrals" made from celluloid rings in various sections of the chamber, say 25 cockroaches in each of 17 rings, and the insecticide be sprayed into the chamber so that each group of insects receives a different quantity of insecticide depending on its position on the floor of the chamber.

C. L. Fardwell, chairman of the legislative committee, reported at

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1941

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National Assn. of Insecticide and Disinfectant Mfrs.

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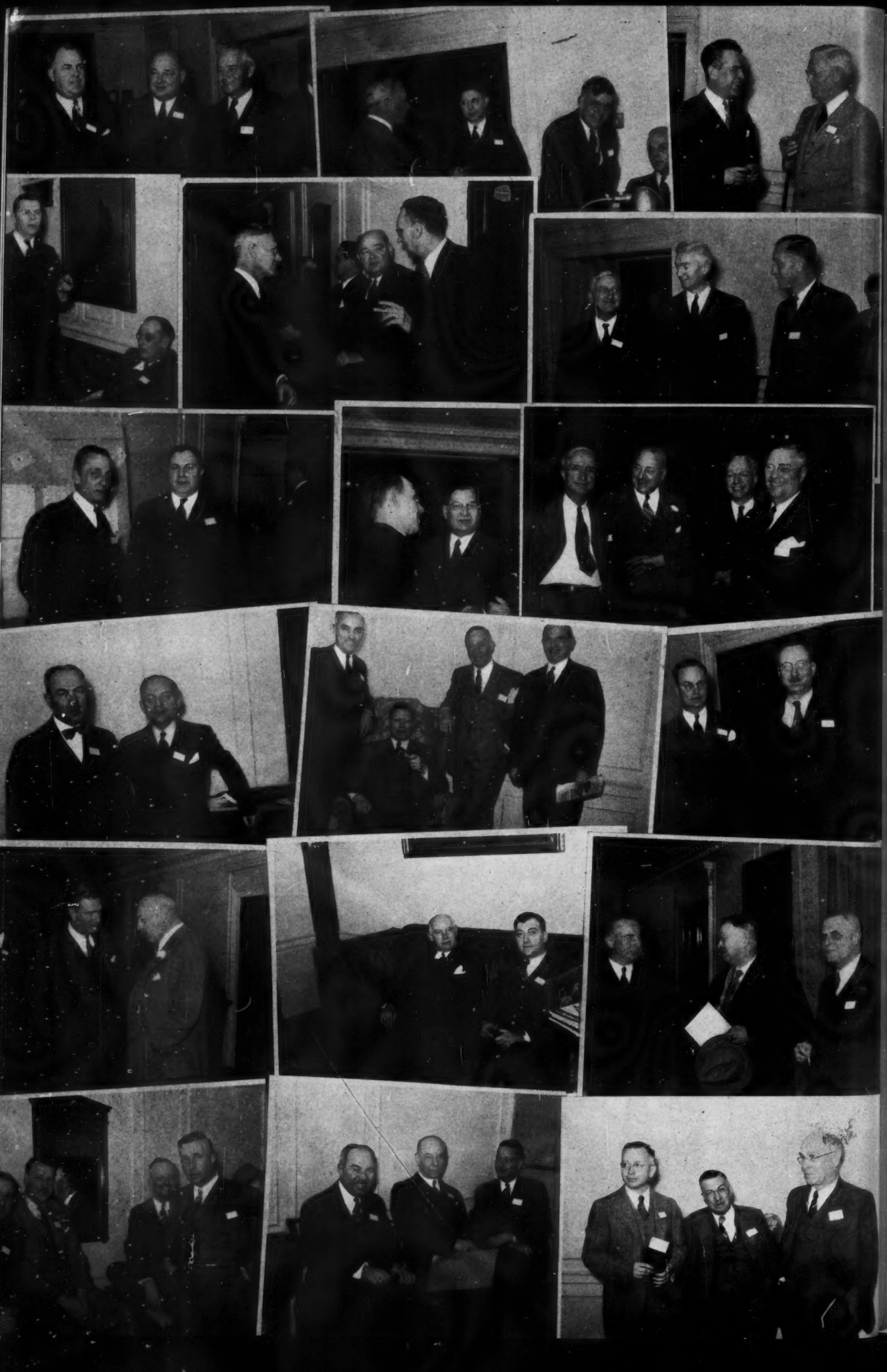


the close of the first day's session on recent legislation relating to insecticides and disinfectants. Legislation in twelve states and Congress was reviewed in detail. Among bills that have recently been enacted into law the following were reviewed: A bill in Mississippi relating to the sale of barbituric acid; an ordinance of the City of Newark (N. J.) controlling the sale of poisonous insecticides and disinfectants; one in New York requiring the imprinting of the word "Poison" on the labels of certain articles; one in Virginia providing for revision of the General Food Law. Mr. Fardwell also submitted two resolutions framed by the legislative committee which were subsequently passed by the association. He predicted that laws controlling the sale of insecticides and disinfectants of many states will be tightened over the coming year. He called attention to the fact that 44 state legislatures will be in regular session during 1941 and advised that the association continue the employment of H. C. Fuller as consultant to analyze new bills which are introduced. Mr. Fardwell's report was approved as read.

SOAPS are not germicidal, the association was told in a report by Dr. E. G. Klarmann, Lehn & Fink Products Corp., who reported on an exhaustive study of the alleged germ-killing properties of soaps. His paper which will be found in this issue, excited a great deal of discussion among the members. The speaker was complimented on having provided a definite answer to the question, "Are Soaps Germicidal?" The same question has previously been answered in the affirmative by many authorities in the world of medicine, who had not verified their claims under scientific conditions, however, said Dr. Klarmann.

A paper entitled "Recent Change in the Organization of the U. S. Department of Agriculture as it May Affect the Enforcement of the Insecticide Act of 1910" was delivered by Dr. C. C. McDonnell, chief of the insecticide division of the department, who told of the functions of the Agricultural Marketing Service now handling the administration of the act.

A proposed definition of water emulsion floor waxes was recommended in a report by Melvin Fuld, of Fuld Brothers, chairman of the sanitary specialties scientific committee. It was suggested that such products be divided into two classes, but only one grade, according to the solid content. The regular class would include compositions containing not less than 10 per cent non-volatile solids and the concentrated class would embrace compositions containing not less than 17 per cent non-volatile solvents. Standards of drying, application, stability, uniformity, wax-resin ratio, softening point, etc., were recommended as presented elsewhere in this issue.

H. C. Fuller, talking on "Association Problems in Washington and Elsewhere," discussed the activities of the Federal Trade Commission operating under the Wheeler-Lea Act and also the apparent conflict of certain state laws, e.g., North Dakota, with the Federal Insecticide and Food and Drug Acts. Under the Wheeler-Lea Act, he said, the important point to be stressed is that all advertising material should carry as much information as appears on the label of the package and should be particularly explicit regarding cautions and limitations of use. Under the law, many drugs must be featured on the label quantitatively and this information must be accurate as it will be checked by the Administration. New products in particular, Mr. Fuller concluded, should be considered carefully in regard to their bearing on the public health.

Progress reports were submitted by the chairmen of special committees of the association. Dr. A. E. Badertscher, McCormick & Co., spoke on the studies of the insecticide scientific committee; F. C. Nelson, Stanco, Inc., reported on the progress made in "Cattle Spray Test Methods" and F. W. Fletcher, of Dow Chemical Co., told of the activities of the committee studying mothproofing problems. He said that progress had been made through joining with the research committee of the American Association of Textile Colorists and Chemists, which group has been studying mothproofing problems for several years. The committee will have further progress to report during 1941, he indicated.

Lieutenant Alden E. Stilson, of Morse-Boulger Destructor Co., discussed "The Effect of the Defense Program on Sanitary Supplies and Insecticides," giving an extremely interesting resume of the problems of sanitation encountered by the army in encampments and of the methods ordinarily used in combating bacterial contamination, insects of all types and rats and mice. He told a number of his experiences in inspecting cantonments which brought out clearly the immense task of maintaining sanitation of an army camp in which from 10,000 to 60,000 men are living. In response to questions from the floor, Lieut. Stilson advised members with products to sell to the army to make contact with commanders of each unit rather than to try to sell the entire army as a whole. Normally, he said, the medical officer who acts as

advisor to the colonel of a regiment is the first point of contact that anyone interested in sanitation will make when he visits the regimental area. According to regulations, sanitation is the responsibility of the unit commander.

The final talk of the Tuesday afternoon session was given by H. H. Linn, superintendent of buildings and grounds of Columbia University, New York, who spoke on "The Sanitary Supply Industry from the Viewpoint of the Consumer." Mr. Linn criticized strongly the tendency of certain manufacturers of sanitary supplies to make exaggerated claims about the merits of their products. To illustrate his point, he read excerpts from a number of cases in which companies had been cited by the Federal Trade Commission for extravagant advertising claims. He also spoke with some asperity on the subject of prices, giving as an example No. 1 paraffin oil which he said he could purchase at 15 cents a gallon but would be charged 30 cents a gallon for it if he bought it as "floor oil" or 60 cents a gallon if he bought it as "floor dressing."

Another fault Mr. Linn found with the industry was the type of some of the salesmen employed. Too many salesmen, he said, are ill-informed, or of the high-pressure type, or are just "parrots" repeating the prices of their materials. He asked that something be done to improve the class of salesmen in the industry. He also registered a complaint about the variation in solid content of materials on the market such as liquid soaps and floor waxes and suggested that such products be labeled to show the customer just what he is getting. He concluded his talk with a plea to drive the shyster element out of the industry, to market products at fair prices and to continue research and progressive development of new and more effective products.

Animated discussion followed his talk during which Mr. Linn corrected an impression that his remarks were aimed at the industry as a whole, but rather only at those companies who were guilty of the practices he had cited.

THE report of the resolutions committee consisting of Fred Hoyt, chairman, Frederick Disinfectant Co.; C. L. Fardwell, McCormick & Co.; R. C. White, Jr., Robert C. White Co.; R. O. Cowin, Standard Oil Co. of Ohio; and Cady S. Corl, Allaire Woodward & Co. was submitted and unanimously approved. Resolutions adopted were:

The convention closed with a cocktail party and informal beefsteak dinner, the evening of December 3, held in the banquet hall of the Roosevelt Hotel. Favors of perfume were distributed by Van Ameringen-Haebler, Inc. After the dinner, a two-hour floor show was put on.

Convention Registration

Company	Representative
Allaire Woodward & Co.	Cady S. Corl, R. P. Neptun.
Agricultural Labs.	Hector E. Valtz.

(*Turn to Page* 134)

REPORT OF THE RESOLUTIONS COMMITTEE

¶ "BE IT RESOLVED, That it is the sense of the membership of the National Association of Insecticide and Disinfectant Manufacturers, Inc., that household insecticides, disinfectants, and other products used for the maintenance of sanitation in and about the dwelling be divorced strictly from products of an agricultural nature in the formulation of the provisions of various State and other local legislation affecting insecticides and fungicides."

¶ The following resolution was adopted at the annual meeting of the Board of Governors and should be approved by this Convention.

¶ "BE IT RESOLVED THAT the membership of the National Association of Insecticide and Disinfectant Manufacturers, Inc., go on record as strongly opposed to all state, local and other fees required for the registration and licensing of products for sale within any state or municipality, and that

¶ "The membership oppose to the best of its ability the introduction or adoption of any and all such registration fees which it considers excessive and accordingly a hardship on manufacturers doing a national business."

¶ BE IT RESOLVED THAT we further emphasize the resolution adopted at the Mid Year Meeting of 1940, to assist the Defense Program as an essential industry.

¶ THAT a committee be appointed to study the feasibility of acting on President Zick's suggestion of some method to record the volume of sales of Insecticides and Disinfectants in the United States.

¶ THAT the representatives of the Government be given the thanks of the Association for their attendance and participation in our meeting.

¶ THAT a vote of thanks be likewise extended by the Association to the Guest speakers and the Committees on Program, Arrangements and Entertainment.

¶ THAT the best wishes of the Association be sent to our old friend and Past President C. Campbell Baird and to Charles J. Dumas and Bill Bjork who were unable to attend this meeting on account of illness.

¶ THAT due to the unfortunate happenings in Pennsylvania recently, we recommend that the Convention reaffirm the resolution adopted at the December Meeting, 1939, at Washington, D. C., which read as follows:

¶ "The National Association of Insecticide and Disinfectant Manufacturers, Inc., recommend to its members, and to all other manufacturers of household insecticides containing sodium fluoride, that only sodium fluoride of a nile blue color be used,

¶ AND THAT such product shall be considered the standard sodium fluoride of this Association."

¶ In view of the valuable and constructive research work which has been carried on at Ohio State University in the field of insecticide investigations during the past several years

¶ BE IT RESOLVED THAT the appreciation of the membership of the National Association of Insecticide and Disinfectant Manufacturers, Inc., be extended to the University, especially to Dr. F. L. Campbell and his staff, and that a copy of this resolution be transmitted to the President of the University.

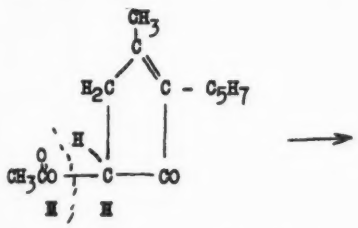
Determination of Pyrethrins

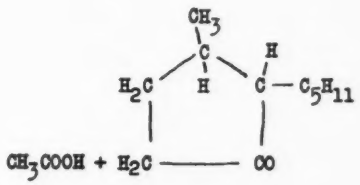
A method for the quantitative determination of pyrethrins based on cleavage on hydrogenation

By Dr. F. B. LaForge & Fred Acree, Jr.*

Bureau of Entomology & P. Q., U. S. D. A.

THE acetyl derivative of pyrethrolene, the cyclic keto-alcoholic component of the pyrethrins was observed by Staudinger and Ruzicka[1] to undergo cleavage on hydrogenation, with formation of acetic acid and hexahydropyrethrone, as represented by the following scheme:





Since this type of reaction was later found by Haller and LaForge[2] to be general for acyl pyrethrolones, its study was extended to the pyrethrins themselves. As chrysanthemum acid pyrethrolone esters, these compounds were observed to yield, on hydrogenation, hexahydropyrethrone and the acids characteristic of pyrethrins I and II, namely, chrysanthemum monocarboxylic acid (which, however, had been hydrogenated to the dihydro derivative) and chrysanthemum dicarboxylic acid monomethyl ester. This cleavage of the pyrethrins on hydrogenation appeared to be quantitative, and reference was made to the possibility of its development into a method for their determination.

The details for such an analytical procedure have now been worked out, and the method has been tested on numerous samples of pyrethrin concentrates and pyrethrum oleoresins and flowers. The procedure involves hydrogenation of the sample in acetone-ethanol solution; precipitation of higher fatty acids with aqueous barium hydroxide; and filtration, acidification, and steam distillation, whereby the volatile dihydro chrysanthemum monocarboxylic acid is separated from the practically nonvolatile chrysanthemum dicarboxylic acid monomethyl ester, which is insoluble in water and soluble in ether or other organic solvents. Before the detailed description of the procedure is presented, each of the steps will be discussed.

Hydrogenation

The cleavage by hydrogenation may be regarded as practically specific for the pyrethrins; hence, whatever acids are formed in the reaction arise from them, or at least from acyl pyrethrolones, and not from any other type of esters.

Our earlier experiments were made with platinum oxide catalyst, but this was found to give erratic results and was unsatisfactory in other respects. The same was found to be true of Raney nickel catalyst. An ideal reagent was then found in palladium calcium carbonate,[3] which is easily prepared and comparatively cheap. The hydrogenation is carried out in a glass tube about 18 cm. long by 4 cm. in diameter and 2-3 mm. thick drawn down at the top to a 2-cm. neck. The tube is closed with a rubber stopper, through which the tube from the hydrogen tank passes. It is provided with a side arm which terminates in a small upright funnel and which may be closed with a stopcock. The tube is agitated with the standard Burgess Parr apparatus or any other suitable device. About 30 minutes at a pressure of 20 to 25 pounds per square inch is sufficient for the reaction.

Precipitation of Fatty Acids

Oleoresins and extracts of flowers and some concentrates contain free higher fatty acids and to a small extent fatty acid esters of pyrethrolone,[4] which would probably yield such acids on hydrogenation. These acids must therefore be removed, and this is accomplished by precipitation with dilute aqueous barium hydroxide. Since the acid reaction product formed by hydrogenation of pyrethrin II is the monomethyl ester of chrysanthemum dicarboxylic acid, the question arises as to whether some saponification might occur at this stage. It has been determined in separate experiments, however, that saponification takes place only to an insignificant extent during the time involved in the practice of the method.

* Paper presented by Dr. La Forge before the 27th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec., 1940.

Filtration, Acidification, and Distillation

The precipitated material together with inert water-insoluble constituents is filtered off with suction, the alkaline solution of the chrysanthemum acid barium salts being received directly in the distillation apparatus. This is an ordinary 250-cc. distilling flask with a neck 18 cm. long having a side arm about 1.5 cm. in diameter located about midway. The side arm is bent upwards and terminates in a bulb about 3 cm. in diameter, from the top of which a tube leads to the condenser. The steam enters through a tube that passes through a rubber stopper to the bottom of the flask. After acidification the distillation is carried out in such a manner that 75 cc. of distillate is collected while the volume in the flask is maintained constant. The amount of distillate may depend somewhat on the size and form of the distilling flask, but it was shown by experiment that 75 cc. is sufficient to remove practically all of any quantity of dihydro chrysanthemum monocarboxylic acid that may be expected.

Unlike chrysanthemum monocarboxylic acid, the hydrogenated compound is stable on distillation from acid solution and presents no difficulty such as is encountered in other methods, involving loss on distillation of the unsaturated acid. Chrysanthemum dicarboxylic acid monomethyl ester is but very slightly volatile with steam, and only a quantity corresponding to 0.12 cc. of N/20 alkali passes over in the 75 cc. of distillate, for which a correction may be made.

A slight excess of hydrochloric acid in 6 per cent solution is used for acidification of the alkaline filtrate. Hydrochloric acid is preferable to sulfuric as it avoids a precipitate of barium sulfate and it is, of course, not carried over by the steam in this dilution. Pyrethrin I is calculated from the direct titration of the distillate.

The water-insoluble chrysanthemum dicarboxylic acid monomethyl ester is extracted with ether from the cooled aqueous suspension remaining in the flask. The ethereal solution is titrated, and pyrethrin II is calculated from the amount of standard alkali consumed. Both titrations are made with N/20 sodium hydroxide and phenolphthalein indicator.

All these operations have been checked by blank experiments on the pure acids, with results given at the end of this article. In all cases the corrections are very small, and they tend to neutralize each other. Since they are in general within the experimental error of the method, they have not been generally applied in the specific examples. The precision attainable is probably within about

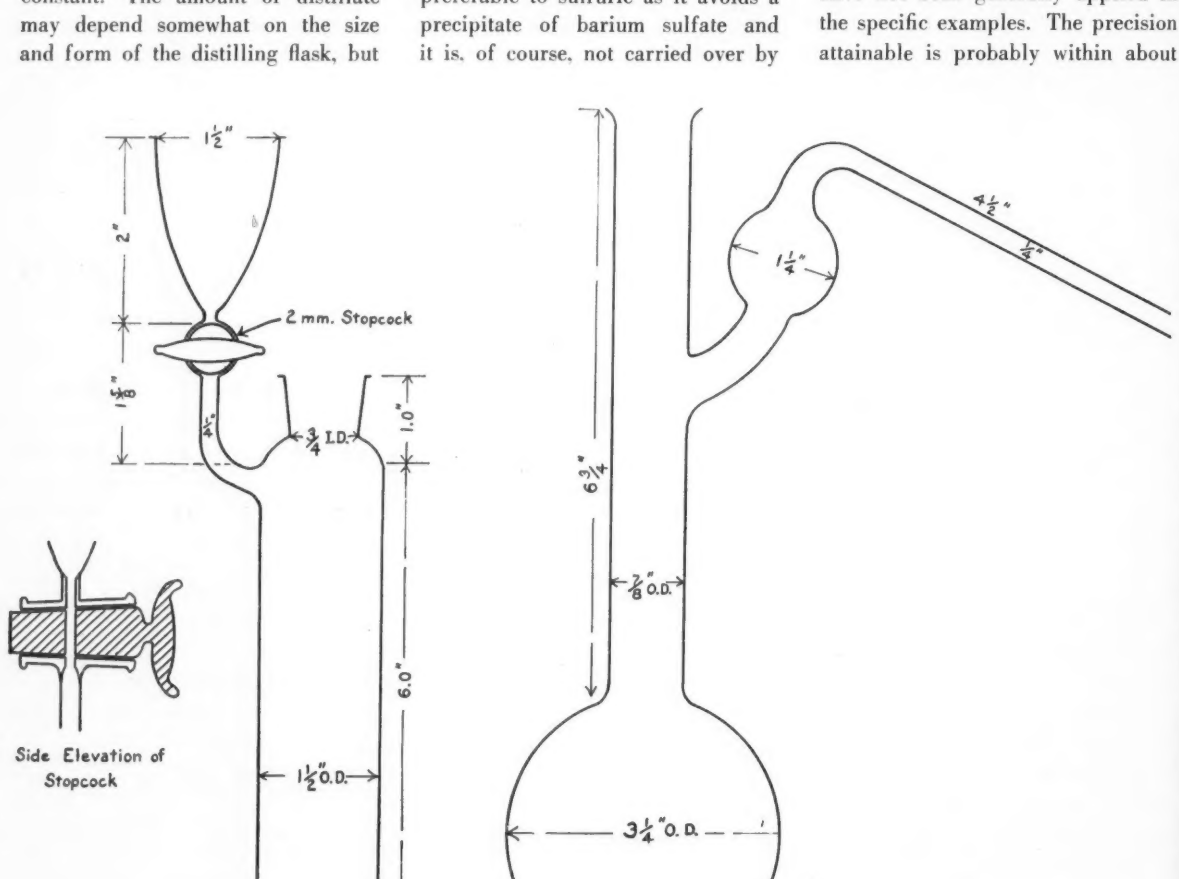


Diagram of apparatus used in the determination of pyrethrins by hydrogenation.

5 per cent of the true value for each of the pyrethrins.

Experimental Procedure

About 1-1.2 g. of palladium-calcium carbonate catalyst is reduced in about 5 cc. of absolute ethanol for 3 or 4 minutes at 20-25 pounds pressure in the hydrogenating tube. The pressure is then released, and the sample of concentrate, oleoresin, or extract of flowers, containing 0.1-0.3 g. of total pyrethrins dissolved in 5 cc. of acetone, is introduced through the funnel and washed in with an additional 5 cc. of the same solvent followed by 5 cc. of ethanol. If a number of determinations are to be made on an oleoresin, for instance, a larger sample is weighed and an absolute-ethanol solution is made up to standard volume, from which convenient aliquots are taken. The volume of organic solvents present during the hydrogenation should be about 20 cc. After introduction of the sample, the tube is evacuated and filled with hydrogen three times and then shaken under 20-25 pounds pressure for at least 30 minutes. The pressure is then released, 20 cc. of about N/20 aqueous barium hydroxide is added through the funnel, and the tube is shaken for 5 minutes to ensure thorough mixing and neutralization of the acids present.

About 0.3 g. of Filter-cel and 15 cc. of water are added, and the solution is filtered with suction directly into the distillation flask, by means of a small glass funnel with flat perforated bottom covered with a disk of filter paper. The insoluble material is washed with water to bring the volume in the flask to 75 cc. Owing to the presence of hexahydropyrethrone the filtered solution may be slightly cloudy and it is sometimes colored light yellow. About 1 cc. of 6-per cent hydrochloric acid is added, and steam from a suitable generator is passed through the solution, the volume of which is maintained constant by a small flame, and 75 cc. of distillate is collected.

The distillate is titrated with N/20 sodium hydroxide solution after addition of phenolphthalein, and the pyrethrin I is calculated from the alkali required for neutralization

$$\left(\frac{\text{cc. N/20 alkali} \times 1.64}{\text{Wt. of sample}} = \%\ \text{pyrethrin I}\right)$$

The contents of the distillation flask, after being cooled, are poured into a separatory funnel, and the flask is washed out with 30 cc. of ether*, which is added to the aqueous solution. The flask is then washed with another portion of 30 cc. of ether, which is poured into another separatory funnel. After being shaken the aqueous layer is transferred from the first funnel into the second, and after extraction with the second ether washing it is discarded. The second ethereal solution is added to the first and the combined solution is washed twice with 7 cc. of water. The combined washings are in turn extracted with 15 cc. of ether, which is added to the main solution, and about 10 cc. of water and a few drops of phenolphthalein indicator are added.

A measured quantity of N/20 sodium hydroxide solution in slight excess is introduced, and the acids are extracted from the ether by shaking. The alkaline layer is then removed and the ether solution washed with two 5-cc. portions of water, which are combined with the first extract. The aqueous solution is then back-titrated with N/20 acid. The content of pyrethrin II is calculated on the basis of a monobasic acid, chrysanthemum dicarboxylic acid monomethyl ester

$$\left(\frac{\text{cc. N/20 alkali} \times 1.86}{\text{Wt. of sample}} = \%\ \text{pyrethrin II}\right)$$

It is most convenient to overneutralize with the standard acid and then to titrate back to a faint pink with the standard alkali. When oleoresins or flower extracts are analyzed, the color change is disturbed by the yellow tinge of the alkaline solution, but the end point is easily observed with a little practice.

All the operations described can be carried out in a little over 1 hour if several analyses are being made, since the hydrogenation can proceed at the same time as the distillation, extraction, etc.

When the method was applied to the analysis of flowers, more time was required for complete extraction of the sample than is generally accepted. The finely ground material, of which about 20 g. is desirable to obtain a sufficiently large titration figure, is extracted with petroleum ether (b.p. 30-60°) in a Soxhlet apparatus for at least 16 hours, although 10 hours is sufficient for about 10-12 g. This time might vary somewhat depending on the form of the apparatus. The solvent is then completely evaporated, avoiding overheating, and the residue washed out into a small beaker with a small quantity of acetone. This solution is concentrated to a syrup, which is washed into the hydrogenation tube with acetone and ethanol as described above. If any petroleum ether is still present, it causes the catalyst to become sticky and vitiates the analysis. These directions were observed in obtaining the results on the flower samples.

The results obtained on various pyrethrin concentrates[5], are presented in table I, on some oleoresins in table II, and on flower samples in table III.

Sources of Error

The results recorded, with one exception, are given with no corrections as is customary with other methods. It will be noted that the precision attained is very satisfactory when the method is applied to concentrates and oleoresins. With flowers the additional operations of extraction and subsequent handling afford more opportunity for errors.

All results given for pyrethrin I are subject to a slight minus correction due to free volatile acids which are not precipitated with barium hydroxide.

A solution of 0.7571 g. of sample C (table II) in 20 cc. of ethanol was diluted to 75 cc. with distilled water, steam distilled, and 75 cc. of distillate was collected. For the titration of the distillate 0.34 cc. of N/20 sodium hydroxide was re-

* Purified isopropyl ether may be substituted for ethyl ether.

Table I. Analytical Results Obtained on Pyrethrin Concentrates

Substance	Weight g.	N/20 alkali cc.	Pyrethrin I %	N/20 alkali cc.	Pyrethrin II %	Total %
(A)	0.3002	6.59	36.0	8.79	54.4	90.4
		6.53	35.7	8.79	54.4	90.1
		6.48	35.4	8.92	55.2	90.6
		6.40	35.0	8.94	55.4	90.4
		6.46	35.3	8.96	55.5	90.8
		6.57	35.6	8.87	55.0	90.6
		6.39	34.8	9.00	55.8	90.6
(B)	0.2883	8.22	46.8	2.29	14.8	61.6
		8.20	46.7	2.28	14.8	61.5
(C)	0.2554	7.99	51.3	6.06	44.1	95.4
	0.2590	8.16	51.6	6.33	45.3	96.9
(D)	0.2854	2.57	14.8	9.63	62.8	77.6
		2.53	14.5	9.68	63.2	77.7
(E) distilled sample)	0.1607	8.32	85.0	1.35	15.6	100.6
	0.1546	8.16	86.5	1.30	15.6	102.1
(F)	0.2609	10.28	64.6	3.30	22.8	87.4
	0.2641	10.44	64.8	3.17	22.3	87.1
(G)	0.1885	1.87	16.3	8.27	81.7	98.0
	0.1553	1.58	16.7	6.79	81.3	98.0
(H) (1)*	0.1416	1.30	15.05	6.13	80.4	95.45
(2)	0.1492	1.35	14.85	6.40	79.9	94.75
(3)	0.1620	1.35	13.85	7.12	81.8	95.65

* Isopropyl ether used for extraction of G and H (1) and (2); ethyl ether for all others.

Table II. Analytical Results Obtained on Pyrethrum Oleoresins

Substance*	Weight g.	N/20 alkali cc.	Pyrethrin I %	N/20 alkali cc.	Pyrethrin II %	Total %
(A) Japanese flower oleoresin	1.003	6.92	11.3	7.06	13.1	24.4
		6.84	11.2	7.22	13.4	24.6
(B) Kenya flower oleoresin	0.7503	5.17	11.3	4.80	11.9	23.2
		5.30	11.6	4.76	11.8	23.4
		5.28	11.6	4.79	11.9	23.5
		5.22	11.4	4.77	11.8	23.2
		5.24	11.5	4.75	11.8	23.3
		5.16	11.3	4.78	11.9	23.2
(C) Brazilian flower oleoresin	0.7571	6.52	14.1	5.17	12.7	26.8
		6.49	14.1	5.27	12.9	27.0
		6.68	14.4	5.15	12.7	27.1
		6.64	14.4	5.27	12.9	27.3
		6.69	14.5	5.11	12.6	27.1
		6.62	14.4	5.16	12.7	27.1
(D) Kenya flower oleoresin	0.7940	8.63	17.8	6.35	14.9	32.7
		8.75	18.1	6.14	14.4	32.5

* Samples A and C had been analyzed for pyrethrins by Holliday's modification of the Wilcoxon method;[6] (A) I = 11.3%, II = 13.4%; (C) I = 11.4%, II = 11.4%. Sample D had been analyzed by the Seil method;[7] I = 14.8%, II = 12.7%. All analyses by McCormick & Co., Baltimore, Md.

Table III. Analytical Results Obtained on Pyrethrum Flowers

Substance	Weight g.	Time of extraction hours	N/20 alkali cc.	Pyrethrin I %	N/20 alkali cc.	Pyrethrin II %	Total %
(A) Kenya flowers	20	20	8.46	0.694	7.00	0.652	1.346
			8.37	0.686	7.04	0.655	1.341
		16	8.31	0.682	6.97	0.648	1.330
			8.47	0.694	7.10	0.660	1.354
		12	2.77	0.227	4.15	0.386	0.613
			3.42	0.281	4.53	0.421	0.703
(B)	20	20	2.92	0.240	2.75	0.256	0.496
			2.89	0.237	2.78	0.259	0.496
(C)	10	20	2.77	0.454	3.25	0.604	1.058
			2.79	0.458	3.10	0.576	1.034
(D) Six years old Japanese flowers	12	8	1.70	0.232	2.46	0.382	0.614
			2.10	0.287	2.53	0.392	0.679
(E) Domestic flowers	20	20	6.14	0.504	4.00	0.372	0.876
			6.58	0.540	4.27	0.397	0.937
			6.53	0.536	4.21	0.391	0.927

Sample B had been analyzed for pyrethrins by Holliday's modification of the Wilcoxon method, I = 0.17%; II = 0.22%. Sample D had been analyzed in 1934 by the Seil method, I = 0.36%; II = 0.54%. Sample E had been analyzed for pyrethrins by Holliday's modification of the Wilcoxon method, I = 0.47%; II = 0.385%; and by Seil's method, I = 0.59% and 0.58%; II = 0.38% and 0.42%. The results for sample E have been corrected for free volatile acid.

quired. After titration 5 cc. of N/20 barium hydroxide was added to the neutral distillate, which was filtered, and after acidification with 1 cc. of 6 per cent hydrochloric acid the distillation was repeated. The titration of the 75 cc. of distillate required 0.34 cc. of N/20 alkali. The results for pyrethrin I in this sample are therefore subject to a correction of about —0.75 per cent, and similar corrections would probably apply to the other oleoresins.

Likewise a correction may be applied to substance A (table III). Two 20 g. samples were extracted for 20 hours and the extracts steam distilled as just described. Each distillate of 75 cc. required 0.53 cc. of N/20 alkali. A corresponding correction for pyrethrin I would amount to —0.043 per cent.

These corrections for free volatile acids are the only ones that fall outside the limits of error for the method, each step of which has been controlled by blank experiments.

Errors in Titration. — When phenolphthalein is employed as indicator, about 0.05 cc. of N/20 alkali is required to produce the color intensity that can be regarded as the end point in 75 cc. of distilled water.

Errors in Recovery of Dihydro Chrysanthemum Monocarboxylic Acid.—Anal. Titration of 0.0682 g. of substance in 10 cc. of ethanol and 15 cc. of water required 7.80 cc. of N/20 sodium hydroxide. Mol. wt.: Calcd., 170.2; found, 174.9.

The solution after titration was diluted to 75 cc. with water and after addition of 1 cc. of 6 per cent hydrochloric acid was steam-distilled and 75 cc. of distillate collected. The distillate required 7.53 cc. of N/20 alkali, uncorrected for the blank for neutralization, which was equivalent to an observed recovery of 96.6 per cent. The same quantities of the reagents, when distilled in the same manner, gave a blank of 0.11 cc. of N/20 alkali. The corrected titration is therefore 7.42 cc., equivalent to an absolute recovery of 95.2 per cent.

A solution of the acid in ethanol was prepared, of which 10 cc.

(*Turn to Page* 115)

Insecticide Law Enforcement

Recent changes in the organization of the Department of Agriculture as they may affect enforcement of the Insecticide Act of 1910

By Dr. C. C. McDonnell*

In charge, Insecticide Division
Agricultural Marketing Service, U.S.D.A.

ALL of you know that after the Insecticide & Fungicide Board was abolished in 1928, the Insecticide Act has been, until June 30, 1940, enforced by the Food & Drug Administration, then a Bureau of the Department of Agriculture. As a result of changes in the organization of certain government Departments brought about through the President's Reorganization Plan No. 4, dated April 11, 1940, whereby the Food & Drug Administration, and its functions except those relating to the Administration of the Insecticide Act of 1910 and the Naval Stores Act, was transferred to the Federal Security Agency, effective June 30, 1940, it became necessary to make some changes in the set up for the Administration of the Insecticide Act. After a study was made by Department officials to determine the most effective way in which this law might be enforced, the Secretary of Agriculture issued an order placing the administration of the act in the Agricultural Marketing Service of the Department, effective June 30, 1940.

On first thought it might appear that the enforcement of an act, such as the Insecticide Act, was foreign to an agency designated "Agricultural Marketing Service." Considering the purposes underlying its formation and its designated functions it might more appropriately be designated "Agricultural Service." The enforcement of the Insecticide Act falls strictly within such a designation.

I will outline briefly the organization and functions of the Agricultural Marketing Service. It is one of the largest bureaus of the Department, having about 3,300 employees, most of them being located in various places throughout the country outside of Washington. While it was established under this name only a little over a year ago, it was formed through the consolidation of a number of the oldest units in the Department, including certain activities of the Bureau of Agricultural Economics, the Bureau of Animal Industry, the Bureau of Plant Industry, and the Bureau of Dairy Industry, to which were added other federal activities. Its functions include the collection and dissemination of crop and livestock production statistics; daily reporting on a nation-wide basis of market information from terminal markets, shipping points and producing sections; the promulgation of standards and the inspection of the more important farm products; research and demonstration in standardization, grading, preparation for market and other related phases of marketing and the administration of twenty federal regulatory laws pertaining to the pursuit of agriculture. These include the U. S. Grain Standards Act; the U. S. Warehouse Act; the U. S. Cotton Futures Act; U. S. Standard Containers Act; Packers & Stockyards Act; U. S. Cotton Standards Act; Perishable Commodities Act; the Federal Seed Act; the Standard Container Act, and others.

Mr. C. W. Kitchen is Chief and Mr. H. A. Reed, Asst. Chief of Agricultural Marketing Service.

Mr. Kitchen is a career man in federal service, having been identified with the marketing research service and regulatory work of the Department of Agriculture for twenty-five years. He has been largely instrumental in organizing and building many of the Departments' activities that comprise the bureau which he now heads. Prior to his present position he was for a number of years Assistant Chief of the Bureau of Agricultural Economics.

Mr. Reed entered the Bureau of Agricultural Economics of the Department in 1931 and served in the London and Berlin Offices of the Foreign Agricultural Service of the Bureau in connection with the foreign marketing of American farm products until his present appointment in 1939. Before entering the Department his professional career included work with the extension service of Kansas, livestock investigations at the University of Arkansas, and Prof. of Animal Husbandry at the Kansas State Agricultural College. Mr. Reed is a native of Missouri and is a typical "show me" Missourian.

*Address before the 27th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec., 1940.

While the transferring of the Insecticide Act enforcement work to the Agricultural Marketing Service involved some changes in the set-up—particularly in the business administration and some rearrangements in the inspection service,—the technical staff is practically the same as formerly. Chemical laboratories are maintained in Washington, New York, Chicago and San Francisco. The principal entomlogical testing station is at the Agricultural farm at Beltsville, Md., where facilities are available for testing the various types of orchard insecticides, insecticides for garden and greenhouse use, insecticides for use in the household and on poultry, dogs and other small animals. A testing station is also maintained at Bradenton, Fla. for the testing of products against insects prevalent in the southern states. The field tests on fungicides are conducted from our stations at Haddon Heights, N. J., which is in an extensive fruit and truck section; Sodus, N. Y., which is in one of the principal fruit growing sections of the East; and Corvallis, Oregon.

The greatest change in the organization has been in the inspection service. Under the Food and Drug Administration the services of all of the inspectors of the Administration were utilized in this work. When the separation was made we took over eight trained inspectors, who devote their full time to inspection work in connection with the enforcement of the Insecticide Act. However, the organization of the Agricultural Marketing Service is particularly well suited to the handling of this work. It has at present offices in 112 cities throughout the United States and the employees at these stations may be called upon at any time to collect samples from shipments of products subject to the Insecticide Act. In addition to these facilities the Service operates more than 8,000 miles of leased telegraph lines which are available for use in this work when quick action is required.

After samples have been collected and examined the procedure is, in general, the same as in the past, with the exception of the holdings of hearings. If the results of the examination indicate that a violation of the law has occurred a letter is written to the manufacturer notifying him of the nature of the violation and requesting a reply in writing. This is in lieu of the former method of issuing a notice in the form of a citation requesting him to appear at one of the stations of the Food and Drug Administration to make reply in person. If the manufacturer, in addition to a written reply, desires an oral hearing and so requests in his reply—giving the reasons for such request—he will be given a hearing if it appears that anything can be accomplished by it. In some cases it is apparent that the manufacturer has not fully understood the charges and when these are more fully explained to him by letter he may decide that a personal hearing will be unnecessary and withdraw his request. In other cases the charges may be of such a character that the reference of the case to the court is definitely indicated and it would be useless to put the manufacturer to the additional expense of coming to Washington and use up his time and ours to no avail. In such cases he is told frankly that we cannot take other action than to refer the case to the court.

If the violation is of a minor character, due perhaps to a little advertising exaggeration as a result of over enthusiasm of the advertising department, or perhaps makes a claim based on evidence that he thought reliable, or of a type that would not result in any particular harm to the user of the product, we write him a letter, as has always been the practice in the enforcement of the law, pointing out the objectionable features of the label, and give him an opportunity to voluntarily make the necessary corrections. The law does not provide for this latter method of procedure, but we feel that it is common sense to proceed in this manner. Do not be misled, however, into believing that a warning notice will be sent to a manufacturer before a prosecution will be filed. The law does not provide that intent must be shown. Just as serious damage may be done to a grower's crop or orchard through the use of a product containing a dangerous ingredient accidentally added to it as if it were intentionally and knowingly added. The law was passed by Congress primarily for the benefit of the consumer, and the responsibility for putting out a properly manufactured and properly labeled product rests squarely on the manufacturer. This is well known to all of you older members, but the association is now made up largely of men of a more recent generation than those who founded it and I want to impress this fully upon them.

Manufacturers of insecticides and disinfectants occupy a responsible position. These are specialized industries and require much knowledge and skill and close scientific control in order to be assured that proper products will be produced. It cannot be done by just anyone who has a barrel and a stirrer, as many have tried and found out to their sorrow. We try to be human and reasonable and will do our best to aid you whenever we can, but a duty rests on you and do not go ahead blindly or carelessly until the damage has been done and then expect us to overlook it or pat you on the wrist and say, "Don't do it again."

In my talks before you on previous occasions I have complimented the association for the work it has done in the past and its beneficial influence over the insecticide and disinfectant industries, and, last but not least, for the help it has been to us who are engaged on the largely thankless job of enforcing the law. As long as the management of the association continues to rest in the hands of those whose motives are for the good of the industry I trust that it may continue to grow in numbers, that its influence may spread, and that the spirit of friendly cooperation among its members may continue as in the past.

A CONSUMER VIEWS

the Sanitary Supply Industry

By H. H. Linn

Supt. of Buildings & Grounds, Columbia University

IT IS not quite clear to me just why I should have been invited to speak before this group.* I am not a compounder, manufacturer, distributor, or salesman for any type of sanitary supply. Nor am I a chemist or research specialist in this field with some kind of a message for you. I am nothing more than a lowly consumer who buys some of your wares, —warily. Presumably your program committee thought it might be interesting to get the viewpoint of a consumer, and especially one who does not always agree with you. In that respect, at least, I may fill the bill.

Since I am a stranger in your midst, may I briefly explain my official position. My title at present is Superintendent of Buildings and Grounds at Teachers College, Columbia University. My supplementary activities include: (1) teaching a graduate course in the Operation and Maintenance of School Plant, and (2) directing and teaching short intensive training courses for school building service employees. From time to time there are talks before school association groups, surveys in other school systems, and during spare time, I do some writing in these related fields.

As a consumer, I appreciate the value of sanitary supplies. In the routine operation of school plants, we find them almost indispensable. Routine housekeeping and sanitation require both labor and supplies, but labor accounts for fully 90 per cent of the total cost. If the supplies were taken away from us entirely, we could not get equally satisfactory results if we were to double or treble the labor. Just imagine us trying to clean surfaces with clear water or to swat cockroaches, for example.

My field of activity is connected with educational institutions so I shall speak briefly about the use of sanitary supplies in school buildings. In case you don't know it, the United States Office of Education reported a total of 238,867 public school buildings housing elementary and secondary school pupils in 1936. The aggregate value of this property, including buildings, grounds, furniture, equipment and library material, was placed at $6,731,324,741. That's not a bad market for sanitary supplies. And these figures did not include private and parochial schools and colleges, but just the elementary and secondary public school buildings of the country. We cannot find any accurate figures anywhere showing the annual cost of sanitary supplies for this great school plant, but we may hazard an estimate of something like $15,000,000. This would mean an outlay of approximately 50 cents per pupil per year.

It is our personal observation, based on a study of the general situation, along with surveys in a number of plants, that while there is much misuse of sanitary supplies in some respects, there ought to be a still greater demand for certain types of such supplies in our educational buildings. We know that the use of soap for handwashing in schools ought to be expanded. That statement goes for towels also. The schools of the country ought to teach cleanliness, and they ought to practice it. The short sighted policy of economy that denies children a chance to wash their hands with soap and warm water and proper provisions for drying them, is utterly stupid. In fact, when we stop to consider the value of soap and water as a disinfectant, it is nothing short of criminal. Yet, such a condition is found in some communities.

We disagree emphatically with a number of the contentions which Mr. Linn makes in this paper, and feel that to a great extent, he has taken the fly-by-night sector of the industry as representative of the whole. To us, it seems that he has painted a picture of a tenement street on the lower East Side and has said: "This is New York." In some cases, it is our view that his statements are definitely wrong.

However, there is another side to the picture, the side at which none of us like to look. In some of his statements, we know that Mr. Linn is right,—dead right. And they make us wince when we hear them. There is no gainsaying the fact that a concerted effort to clean up these bad spots, as has long since been done by the more progressive sanitary supply houses, would be to the future benefit of the entire industry. Some introspection in the light of Mr. Linn's charges might not be amiss.—The Editor.

* Address before the 27th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec., 1940.

There are literally millions of square feet of floor surfaces that ought to be sealed, or waxed. There are thousands of acres of wall surfaces that need more frequent washing. There are millions of desks that need polishing. There are hundreds of thousands of plumbing fixtures that should be cleaned daily. There are millions of window panes that need periodic cleaning. In some instances, these higher standards of cleaning may require more man labor. However, our own studies have indicated that what is needed most is not additional man power, but

First—trained man power
Second—proper tools and supplies
Third—definite schedule of work.

In my opinion, the greatest weakness in the past in the care of school buildings has been the very casual selection of employees without any type of training for their jobs. This situation is being improved somewhat at present, but we still have a long awy to go.

I already have stated that schools might well increase the consumption of sanitary supply materials. I may add that I believe in the use of effective sanitary tools and supplies and consider their purchase a sound investment when they are used properly. Up to this point, you and I no doubt see things pretty much eye to eye. We consumers need your products, and the improvement in effectiveness that your research is demonstrating. But—if we need you, you also need us. You are no Santa Claus, nor are you in this industry for your health's sake, and you need our business for your own success.

As producers and distributors, you no doubt know that many consumers view your industry with a skeptical eye and that you do not enjoy their complete confidence. To be quite blunt, I am among that group. I shall now proceed to tell you why. But first, let me state that while my statements are general for the industry as a whole, they might more properly be levied against specific concerns, since many individual companies and persons ought to be exempted from unjust criticism. We recognize that some of your firms do business on a high ethical plane.

One of the main abuses against which I object, is misleading advertising. Your statements and claims oftentimes are grossly (and even fascinatingly) exaggerated. An unkind person might call these exaggerations plain lies. In a temporary spirit of charity and tolerance, I shall simply label them "untruths." There are gullible consumers who accept your advertising materials and no doubt you make many sales as a result. But all consumers are not dunces and they are learning. During recent years consumer education has been progressing at a tremendous rate. Organizations such as *Consumers Research* and *Consumers Union* are functioning. Laws have been enacted and regulations established to protect us in part. The Federal Trade Commission makes a feeble attempt to protect us by giving a verbal spanking to some of the offenders. To support my case, let me quote a few reports concerning stipulations and orders initiated by the Federal Trade Commission. Here are a few taken from a periodical that deals with your industry:

No. 1. I quote:

> "The use of a number of brand names for soap made by the same formula by United Soap Co., Seattle, was recently ordered stopped by the Federal Trade Commission. The F.T.C. found that the company made and sold soap under the various names of "Hot Springs Mineral Soap," "Hawaiian Rose," "Velvette" and similar names and that all the soaps, regardless of name, were made in Seattle and by the same formula. Other findings of the commission were that the terms "medicated" and "vitamized" used on certain of the soaps were misleading; that the price of 75 cents, was wholly fictitious."

This "vitamized" soap description ought to be worth a pot shot from me, but perhaps it is best to ignore it. Since it doesn't mean a thing, we may just pretend it was suggested by a child. However, some members of your industry do show a positive talent for description, sometimes bordering on the ludicrous. We hear of a liquid soap described as the "Champagne of liquid soaps." Ye gods, what a description! What is the connection? Are we to guzzle the liquid soap, or smell it, or does "champagne" refer to the price? (I could see some connection there perhaps.) Such literary deviation reminds me of the story of a congressman who got up to orate on some topic or other. In the course of his vocal belching he went on to say—"I smell a rat; I can see it floating in the air, but I shall nip it in the bud."

Champagne of liquid soap, indeed! Acme of bunk, say I.

No. 2. I quote again:

> "Fitzpatrick Bros., Chicago, manufacturers of "Kitchen Klenzer" have just signed a stipulation with the U. S. Federal Trade Commission agreeing to discontinue certain claims made in their advertising. The company will no longer state that their product will keep refrigerators germfree and odorless; that it is effective without rubbing; that it restores original luster to painted surfaces and that all other cleansers may cause sore hands."

The person who wrote that advertising copy should be properly classified. He is a writer of fiction.

No. 3. Again I quote:

> "Air Conditioning Textiles, Inc., New York, has recently been charged by the Federal Trade Commission with misrepresentations in the sale of its toilet soap known as "Air Conditioning the Human Body" soap and as "Air Conditioning" soap. The company had stated that its product "definitely reduced body temperature," and "eliminated perspiration objections." Use of the term "Air Conditioning," the commission stated, implies that the principle of air conditioning has in some manner been incorporated into the soap, which is not so."

Well, well, so now we have air conditioned soap! It sounds more

like hot air conditioned advertising. But we may as well learn to expect anything at all. I hear we have sneezeless soap on the market now. How nice! Now we have odorless soap, tasteless soap, greaseless soap, and sneezeless soap. With all these "less" soaps may I facetiously suggest that someone might try the term "use-less soap." It probably is as close to the truth as some of these other fictitious claims.

If you think "big" names and firms are exempt from criticism, let me quote a recent stipulation signed by the company that has for one of its slogans, "99-44/100 per cent pure." Apparently, the slogan refers to ingredients and not to advertising statements. But since the advertising is not accurate, we don't believe the slogan either.

No. 4. I quote:

> "Procter & Gamble Co., Cincinnati, has entered into a stipulation with the Federal Trade Commission to cease advertising that "Ivory Soap" is purer or milder than any competitively sold soaps. According to the charges of the F.T.C., advertisements published by Procter & Gamble read: "Most castiles cannot equal Ivory's mildness! Tests made on more than 20 castile soaps over a period of years show that many of them vary in purity from year to year—and cannot be compared with Ivory's high standard of unvarying purity." Under its stipulation, the company agrees to desist from representing that any test as to the mildness of "Ivory Soap" shows that it is purer than competitive soaps or that the mildness of a soap is indicative of its purity."

It seems too bad that a company putting out some really good merchandise jeopardizes its rating by such misrepresentation.

However, if Procter and Gamble Co. is chagrined at that stipulation, it has plenty of other company. It can continue to promote its "Drene" as a hair shampoo, knowing that one of its competitors was spanked sometime ago for talking too big:

No. 5. I quote:

> "R. L. Watkins Co., New York, has signed a U. S. Federal Trade Commission stipulation agreeing to cease representing its "Mulsified Cocoanut Oil Shampoo" cannot possibly injure the most tender scalp; that scientists say it is the safe and best preparation to use for healthy, beautiful hair, and that it restores to the hair natural oils and youthful beauty."

I wonder what scientist has said that this particular material is the best preparation to use for healthy beautiful hair? Could he have been employed by the Watkins Company, do you think? Your advertising claims at times are quite scintillating. They rarely are modest. But where do you get all the superlatives you use? Why are so many of them "the best," or "the safest," or "the mildest," or "the purest," or "the quickest in action," or "the most economical?" You can't all be the tops, not when we find some of you compounders packaging the same material under different trade names. In a spirit of levity, may I suggest that you not only are compounders,—you also are confounders.

Recently, another big shot in your industry must have felt silly when the following report was issued. I quote from P.M.

No. 6.

> 'The Federal Trade Commission has announced that the Colgate-Palmolive-Peet Co., Jersey City, and its subsidiary, Kirkman & Son, Inc., New York: agreed to cease and desist from certain claims for various soap products—
>
> (1) That "Palmolive Soap" contains special protective qualities which are not present in other soaps, that the "soft, smooth complexions" of the Dionne quintuplets are directly the result of Palmolive soap. The company also agreed to cease using the unqualified statement "Made with olive oil."
>
> (2) That "Cashmere Bouquet" soap or its lather will remove dirt and cosmetics from every pore.
>
> (3) That "Concentrated Super Suds" destroys all the germs in family wash.
>
> (4) That dishes washed with "Super Suds" require no wiping.
>
> (5) That "Colgate Rapid-Shave Cream" makes two shaves a day unnecessary and that using this product or "Palmolive Shave Creams" results in faster, smoother shaves than are obtainable with like preparations.
>
> (6) That "Kirkman's Soap Flakes keep your hands soft and white" and keep lingerie new in appearance almost forever.
>
> (7) That bad breath is corrected only with the special ingredients in Colgate's Dental Cream."

But why waste your time telling you what you already know. I have only a few minutes for my entire paper. It would take me hours to read reports of stipulations covering all branches of your industry. These few minutes have been devoted largely to soaps. Pages and pages could be quoted to give red faces to some distributors of disinfectants, insecticides, polishes, waxes, cleaning powders, scrubbing compounds, fungicides, and what else have you. I venture to state that more cease and desist orders will be issued in the future for there are still plenty of brash and untrue statements in the advertising material of the industry. So long as you continue this practice, you cannot expect to gain the consumer's confidence.

Frankly, I do not understand why the sanitary supply industry must be so loose and inaccurate in its statements to the consumer. Most of your products are filling a recognized need. Truthful statements, without exaggeration, ought to be adequate to tell your story, as you have a good story to tell. I believe it might be said to your credit, however, that there appear to be fewer flagrant abuses practiced today than was the case a few years ago. Shall we thank the F.T.C.?

Another objection that I, as a consumer, have against your industry, deals with the practice of giving trade brand names to simple products and charging excessive prices for them. There is some value in trade names, no doubt, but the practice

D&O

ESTABLISHED IN 1798

concentrates

for

HOUSEHOLD INSECTICIDES

PYRETHRUM EXTRACT No. 20 ODORLESS

An improved type of Pyrethrum concentrate made by a completely cold process. D & O PYRETHRUM EXTRACT No. 20 ODORLESS sets new quality standards for clarity, stability, and freedom from odor, and is unsurpassed in killing power and knockdown value.

PYRESSENOL No. 20 ODORLESS

Combining D & O Pyrethrum Extract No. 20 Odorless and the odorless activator, Neutressenol, PYRESSENOL No. 20 ODORLESS is recommended for regular-strength household insecticides and especially for the semi-concentrates employed in electric and steam vaporizers where its special effectiveness against roaches is a great advantage.

Used at the same dilutions as Pyrethrum No. 20, it is equally as effective, equally as safe and pleasant to use, and substantially more economical.

ROTOPYRESSENOL No. 20

This concentrate combines Pyrethrum, Dihydrorotenone, and Neutressenol in the proportions which have been found most economical and effective.

ROTOPYRESSENOL No. 20 is about equivalent to Pyrethrum No. 20 in cost per gallon and is not odorless, but sprays made from it are characterized by high 24-hour kill, substantial moribund kill in addition, and special effectiveness against crawling insects.

DODGE & OLCOTT COMPANY

180 Varick Street **New York, N. Y.**

BOSTON : CHICAGO : PHILADELPHIA : ST. LOUIS : LOS ANGELES

Plant and Laboratories . . . Bayonne, N. J.

appears to be abused. How many dozens of branded cleaning powders are there that are nothing more than soda ash or trisodium phosphate sold at several times a fair price; and how many different names are applied to packaged sodium fluoride and retailed at from 5 to 10 times the price of the material under its proper technical name. How many cheap glass cleaners are a solution of a little alcohol and a lot of water and maybe a little coloring matter, which, nurtured by hooey become a fantastic achievement.

How many so-called disinfectants are little more than smelly moisture? We refer now, not to the proper type of disinfectant, but to the sham type such as was pointed out by Chase and Schenk in their "Your Moneys Worth,"—the Lake Michigan water doctored with a small percentage of formalin, selling for $62 a barrel and costing only a fraction of that amount.

How many branded furniture polishes and floor oils are sold at stiff prices that are litle more than cheap mineral oils? In my own experience, I have been offered Number 1 pale paraffin oil in barrel lots for 15c a gallon, but was charged 30c a gallon for the same stuff out of the same tank if I used the term "floor oil." And a sanitary supply distributor has graciously offered me a bargain—the same identical material except his label "floor dressing" at 60c a gallon. I know of gullible consumers who have been trimmed for $2.00 a gallon for practically the same stuff in the same amount.

We sometimes hear the explanation that secret formulas are used to compound superior products. Unquestionably some superior formulas are developed and credit should be given to those individuals and concerns that are constantly experimenting to develop better and better materials. But claims for supposedly secret and superior formulas are so common that we consumers are rather skeptical. This skepticism may be unfair to the better group in the sanitary supply industry, but it is the result of the questionable practice of a segment of the industry.

Next, will you forgive me for saying some unkind things about some of your salesmen? I meet great numbers of them. Many of the men are intelligent, sincere, and honest, and know their business—that is—they know their products. It is a pleasure to confer with them and they get their share of our business if their materials and prices are good. Other men, also intelligent, sincere, and honest, are little more than parrots glibly repeating what they have been told to say about the great superiority of their brands. Some of these men can't answer such a simple question as to what the solid content of a wax or of a liquid soap is. They just don't know anything about their products. They can't talk intelligently about their own line. They are only price quoting parrots and we would rather not waste our time with them.

Then, there are the glib high pressure fly-by-night salesmen who expostulate and elaborate and exaggerate—and fib! We have no time or use for this species of salesman either. In my book of sarcasm, they would be dubbed "the cockroaches of the sanitary supply industry."

I have met many fine salesmen. My favorite personality is a man who is a graduate chemist; he knows his business; he tells the truth; there is no high pressure about him; he offers worthwhile suggestions at times; he never runs down a competitor; he represents a stable concern that sells good merchandise at a reasonable figure; and he has never sent a Christmas present or offered a cigar. It is a satisfaction to visit with a high type salesman who knows his products, and a bore to listen to a palaverer who has simply something to sell and who knows little or nothing about it—except that "it is the best." And he knows it is best only because his sales manager said so. I should like to suggest that your industry ought to be more selective in the choice of salesmen who represent you. A weak sister is more likely to harm you than to help you.

I suspect that most of you are opposed to the ideas that labels on your containers should indicate percentages of various ingredients. I can understand your point of view. And you have some sound arguments against this as a requirement. It is true that some consumers might misconstrue labels, and actually condemn a good product because of a mistaken interpretation. This might prove embarrassing at rare intervals, but we doubt that it would be general.

Personally, I am of the opinion that some reasonable labeling requirement is a good thing for the consumer. Too many consumers buy your wares blindly, too often on a price basis. Liquid hand soaps, or waxes, or floor seals are priced at so much per gallon. The price per gallon is important only in the light of the quality of the product. The liquid soap may have a solid content of from 10 to 40 per cent, the remainder water. The wax may have a solid content ranging from 7 to 18 or more per cent, the remainder liquid. The floor seal may have a solid content ranging from 25 to 50 per cent. Of course, the variation in solid content may not represent the only difference in the quality of a product, but it is one of the major considerations. You may say that the intelligent consumer can secure the desired information from the distributor, or the products can be tested, or that they can be purchased on the basis of proper specifications. That sounds all right, and it may work out all right in many instances, but testing is not always a simple expedient measure and we regret to state that we cannot accept the statements of all distributors. Some of them have developed bad habits in preparing advertising copy and get their figures mixed; others are vague and indefinite; and others claim secret formulas they prefer not to divulge.

We recently tested a water emulsion wax that had been recommended to us after the distributor had refused to present any type of analysis. We can understand why he refused to give out any information other than that he considered his product the best on the market using only pure carnauba wax. Our test

(*Turn to Page* 117)

Fortify your Livestock Spray with

Permanent Leg Paralysis!

USE

PRALYTEX

(PARALYSIS THAT KILLS)

Repels and Kills by LEG CONTACT!

Particularly Effective on CRAWLING INSECTS

Just as effective on flying insects whose legs contact this product.

WHITMIRE RESEARCH CORPORATION

339 SOUTH VANDEVENTER · SAINT LOUIS · MISSOURI

WRC

Our insecticidal chemicals are stocked in the East for prompt distribution in Eastern states and foreign countries by Dodge & Olcott Co., New York City

Copyright Whitmire Research Corp., 1941

Chemistry in INSECT CONTROL

By Dr. E. G. Thomssen and Dr. M. H. Doner*

J. R. Watkins Co.

IN THE control of insects the economic entomologist has a choice of numerous methods open to him. Methods of six major classes are listed by Metcalf & Flint[1]. They include *chemical control* through application of insecticides; *physical or mechanical control*, including screening, use of traps, heat, water, etc.; *cultural control* or use of farm practices such as crop rotation, variation in planting technique, pruning, thinning, etc.; *biological control* through introduction of parasitic insects, protection to natural insect enemies, etc.; *legal control* embodied in enforcement of inspection and quarantine laws, etc.; and *natural control*, which includes climatic factors, insect diseases, etc.

Much is to be said in favor of biological control. Predacious insects such as dragon flies, lace-wing flies, ant lions, lady beetles, ground beetles, praying mantids, syphid flies, along with the parasitic ichneumon flies and related insects, not to mention the numerous other living creatures that include insects in their diet, are of inestimable value in checking certain economic pests. Increases in the numbers of natural parasites and predators can commonly be correlated with decreases in the numbers of certain insect pests, and vice versa. Hence the extended efforts of Federal Bureau of Entomology and Plant Quarantine Entomologists to secure, breed and liberate parasites and predators to aid in controlling certain pests. While biological control, in short, is a slow method and cannot be depended upon to check insect outbreaks to the extent of achieving commercial control, it is, nevertheless, valuable and worthy of continued use and experiment.

* Based on an address by Dr. Thomssen before the Memphis section of the Amer. Chem. Society, Sept. 20, 1940.

The use of chemicals to combat insects is the most important means of control, inasmuch as it is the one method that can be depended upon for effective results. The relief secured by chemicals is temporary in many cases. Yet it is the most valuable means mankind has evolved for repressing his insect foes. Even the ancients recognized the value of chemicals through the accidental discovery that certain insects were killed or repelled when contacted by or in the presence of certain chemicals. Shepard[2] remarks, "Early writers suggested a variety of materials as insecticidal agents, such as hot water, brine, lye, whitewash, soap suds, vinegar, petroleum, turpentine, fish oil, sulfur, decoctions of aloes, pepper, soot, tobacco and worm wood. It was more or less accidental if one was chosen that was at all effective." Up to the beginning of the era of commercial chemical industry most of the insecticides, if not all, were simple, variable, home-made products.

Insecticidal Action of Chemicals

Insecticidal chemicals are commonly described as stomach poisons, contact poisons, or fumigants, depending upon the manner in which the insecticide enters the insect's body. Stomach poisons are those substances that kill when ingested by the insect during the process of feeding. A contact insecticide kills by virtue of its corrosive action on the body wall of the insect or by penetration through the body wall or breathing pores; and a fumigant kills by entering the breathing or tracheal system and affecting the respiratory processes.

This system of insecticide classification, while convenient, is scientifically untenable in that it implies three different types of toxic action. As a matter of fact, all insecticides are contact poisons because surface tissues are affected, whether they be internal or external. In other words, it is a matter of surface action phenomena, not of how a poison enters an insect's body. This fact is well stated by Shepard[2]: "Once the insecticide has passed through the external wall of the body or through the tracheal wall, the toxic action is the same as if the poison had gained admittance to the circulation through the alimentary tract. In fact, a poison whose specific action is evidenced by gastric inflammation, acts the same way whether it is taken with the food or it passes through the body wall." The action of the insecticide may be intracellular such as arsenic which affects the glutathione content of the cells so as to bring about a decreased oxygen consumption and carbon dioxide output. On the other hand, other insecticides affect the biological enzymes (oxidases, reductases, catalases), bringing about death of the organism.

In the last analysis, the problem of insect control with chemicals, as far as plant pests are concerned, is to employ a material that will kill the insect and yet be comparatively safe to foliage. As DeLong[1] pointed out, "We must recognize the fact that we are using these chemicals in connection with two colloidal systems which are very similar in type, for there is very little fundamental difference between plant and animal protoplasm. We are attempting, however, in the use of these chemicals, to destroy one of these colloidal systems (the insect) without injuring the other (the plant) and we must consequently face the fact that the limitations between which we are working

NO PLACE FOR PRIMA DONNAS HERE!

THE pert little blonde second from the left might snatch the spotlight for a short while by over acting her part, but she's smart enough to know that teamwork is the backbone of a good performance. Likewise, with floor wax it takes "teamwork" to give the kind of all-around performance that brings "encores."

In Candy's Bright Beauty Floor Wax, no single feature is allowed to "over act." Naturally, a good floor treatment must be durable . . . but you could hardly call it smart showmanship to put the emphasis on durability to such an extent that the resulting wax is unduly slippery. Or to sacrifice luster to gain a treatment that's waterproof as rubber or nonskid as sandpaper.

On the floor Candy's Bright Beauty rivals in appearance those waxes that play up gloss or luster. In fact, as we have said before: just put Bright Beauty on a prospect's floor . . . alongside a wax that has already proved "eminently satisfactory" . . . and you've practically clinched an order. (A statement we will gladly demonstrate to your satisfaction any time, without obligation.)

Reasonably water-resistant, Bright Beauty will not milk in wet weather . . . withstands damp mopping. Yet it can be readily removed when it's time to apply a new treatment. Bright Beauty creates no difficulty in walking for the average person. To be actually *non-skid*, a wax would have to be so soft and sticky it would be impractical for use as a floor finish.

Sold Through Distributors Only

Bright Beauty is sold through distributors *only** . . . never direct to the consuming trade. It is our unalterable policy never to compete with our jobbers. Packed in attractive containers under your own label . . . competitively priced to allow your usual markup. Write for FREE experimental sample . . . try it under your own most rigid tests.

** Except for experimental accounts in Chicago, essential to research.*

Al Candy, Jr.

CANDY & CO., INC. WAX SPECIALISTS FOR OVER 40 YEARS 2515 W. 35TH ST. CHICAGO

Manufacturers of Prepared Paste Wax, Spirit Liquid Prepared Waxes, Powdered Dance Floor Wax, Concentrated Cream Furniture Polish, Paste Cleaners

are very close and only a narrow margin or degree of safety exists."

Inorganic Insecticides

Inorganic chemicals have dominated the insecticide market until recent years. Among the more important inorganic insecticides are the arsenates of lead, calcium and manganese, selenium, and compounds involving thallium, sulfur, copper and other inorganic compounds. Many of these continue to be used very widely for insect control because substitute materials have given less satisfactory control.

The chief objects against the use of inorganic chemicals for pest control are two: (1) Their tendency to produce plant injury when improperly applied or when plants are sprayed or dusted under adverse weather conditions and (2) The objectionable poisonous residues that remain on treated plants to endanger human health. DeLong (3) has discussed in detail plant injuries caused by arsenicals, sulfur and Bordeaux Mixture.

The residue which highly poisonous insecticides leave on edible fruits and vegetables has given growers and manufacturers of insecticides much concern. The propaganda in this respect was greatly exaggerated in the opening chapter of that widereread work "100,000,000 Guinea Pigs". The authors of this book would lead one to believe that thousands of cases of poisoning result from lax methods of control by the food or health authorities in this respect. They cite no authentic evidence for their conclusions. The situation is actually being given ample attention through regulation and constructive investigation. Pure food, public health and foreign health officials have ruled against the marketing of fruits and vegetables bearing excessive quantities of poisonous residues. The U. S. Department of Agriculture has established and is actively enforcing safe tolerances for spray residues on fruit crops, and increasing attention is being given to the development of practicable new insecticide materials which will leave no such residue.

Organic Insecticides

To eliminate some of the important objections against the use of inorganic chemical compounds for insect pest control, chemists in collaboration with entomologists have sought new materials in the organic chemical field. This does not imply that all these insecticides are of recent origin. Early historical accounts of insecticides mention the use of tobacco (1690), turpentine, carbolic and cresylic acids from destructive distillation of wood (1867) and numerous decoctions of herbs and other plants. The insecticidal value of derris and pyrethrum has been known for many years.

Organic compounds, as insecticides, may be grouped into three types: (1) those of *animal* origin, (2) those of *plant* origin, (3) those prepared *synthetically*.

The first class includes the fish oils, whale oils and other animal fats, glue and gelatin. Due to the comparatively low toxicity of insecticides of animal origin, Roark (4) concludes that they "do not appear to be promising sources of insecticides".

Many products of plant origin and of wide use for insect control may be mentioned. Chief among these are tobacco, pyrethrum, derris, cube, hellebore and quassia. Insecticides made from the roots of derris like plants or from the flowers of the pyrethrum plant, are rapidly replacing the highly poisonous arsenicals for the control of many insect pests. Pyrethrum is essentially a "contact poison" whereas derris and the related timbo and cube plant poisons, are both "contact" and "stomach" poisons. For this reason the latter materials have more extended uses in the insect control program. The toxic constituents of pyrethrum (Pyrethins I and II) and of derris and cube (rotenone, toxicarol, sumatrol, deguelin and tephrosin) are extensively used in cattle and household fly sprays as liquid extracts in mineral oil fractions.

Recently it has been found that cold water extracts of Turkey Mullein, a common weed of Southern Oregon, are toxic to goldfish, just as are extracts of derris and cube root from which rotenone is derived. Extended studies are being made by entomologists at the Oregon State Department of Entomology and it is hoped that this plant can be developed as a native source of plant insecticide.

Within the last few years, considerable attention has been given to testing the insecticidal properties of numerous synthetic compounds. The work is still in a developmental stage, although a number of successful materials have been produced. Phenothiazine (thiodiphenylamine) is of special interest at this time because of its widespread uses. Even at dilutions of 1:1,000,000 phenothiazine is toxic to mosquito larvae. More concentrated dosages show promise in codling moth control, as an anthelmintic for poultry, sheep and possibly other livestock and as a delousing agent for poultry. When fed to cattle, phenothiazine renders the manure unsuitable for the development of horn fly larvae. The thiocyanates present a group of synthetics of remarkable toxicity to many pests. The aliphatic thiocyanates have found extensive use in commercial fly sprays and also in proprietary insecticides for the control of such resistant pests as mealy bugs, leaf hoppers, scale insects, white fly and others.

While, in some cases, synthetics of remarkable insecticidal value are discovered quite accidentally, other materials have had long laboratory histories. Frequently many hundreds of closely-related synthetics have to be biologically tested before the right compound is found. Thus, as the result of a long series of tests by one firm, the 930th compound of an alcohol combined with a vegetable acid was the one actually offered the trade.

Another very interesting synthetic organic insecticide has recently been perfected. Its trade name does not reveal its composition, though it is known to be an ester of one of the fractions of pine oil. This product not only kills flying insects but

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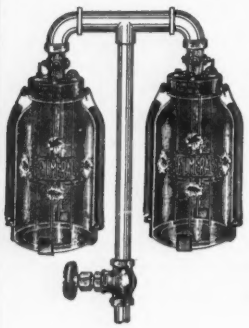

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Pat. Sept., 1934—Aug., 1938

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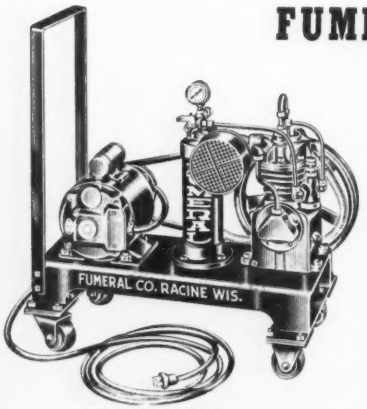

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is claimed to have exceptional repellent properties.

Upset foreign conditions have resulted in an unstable pyrethrum market and this, in turn, has given a strong impetus to utilize synthetics as substitutes for or at least for part of the pyrethrum content of household fly sprays. A number of such materials have been developed within recent years and improvements increasing the toxicity to insects, safety to humans, better appearance and odor mark their respective developments.

Naphthalene is a well-known fumigant for certain household insects, greenhouse pests and soil-inhabiting forms. Paradichlorobenzene is also a well-established material, finding its chief value in clothes moth and carpet beetle extermination, for protecting museum specimens from insect attack, and as an effective control for the peach tree borer.

In passing, we should note the merits of synthetics over other plant-derived insecticides and what the possibilities are for their future development. First, synthetics are uniform in composition and hence show little variability in toxicity. Plant-derived products, on the other hand, notably derris, cube and pyrethrum, are subject to variation in amount of active constituents in consequence of unfavorable climatic and soil conditions, time of harvest, subjection to excessive sunlight, moisture and age. Second, it may be said that some of the synthetics possess greater toxicity to insects than the plant-derived materials. Thus many of the synthetic fly spray toxicants are considerably more toxic to flies than equal volumes of pyrethrum extract in a base oil. Third, the synthetics are usually cheaper, often producing superior products at a more reasonable cost.

The future in insecticides will, without question, witness an even greater use of synthetics in insect pest control. But their discovery will not be an easy task. Roark (4) comments, that while the "number of synthetic organic compounds that it is possible to make is practically limitless . . . only a small percentage of these can be expected to have appreciable insecticidal value. If the radicals in organic compounds that are responsible for toxicity to insects were known, the task of synthesizing the ideal insecticide would be greatly simplified. As yet, however, little is known concerning toxophoric groups in organic insecticides".

Chemicals for Soil Insects

The control of insect pests which attack the underground parts of plants has long been a problem of the entomologist. Only for a few species of pests have satisfactory controls been developed. As examples several chemicals may be mentioned. Solutions of mercuric bichloride have been used to control the cabbage and radish maggot, and fungous gnats attacking the roots of greenhouse plants. Carbon bisulfide is well known for its use to destroy ant colonies in lawns, to fumigate the soil for controlling the root forms of the grape phylloxera and for certain worms and other pests in greenhouse soils. Naphthalene and paradichlorobenzene are used to control other soil-inhabiting pests. Powdered derris root has been successfully used for destroying earthworms.

Within the last few years dichlorethyl ether has been studied as a soil fumigant and found to have toxicity against certain insects. A saturated solution of this chemical in water, applied liberally to the soil, has given excellent control of ground mealy bugs, wireworms and larvae of the Japanese beetle. It appears to be of value also in repelling slugs, snails, sow bugs and garden centipedes. Progress is being made in this field through the combined efforts of chemists and entomologists.

Another recent discovery is the value of methyl bromide for disinfecting bulk soil and the soil of potted plants,—the outcome of research by the U. S. Bureau of entomology and Plant Quarantine to meet the Federal Quarantine (No. 72) for prevnting the artificial spread of the white-fringed beetle from the infested area. Published reports (5) show that proper dosages of methyl bromide not only are effective for the above purposes but that 90 per cent of plant species and varieties are not injured by the treatment.

Fumigants

The control of pests attacking stored food products, grain, household insects (bed bugs), granary insects and nursery stock has been a problem of great importance. The advantage of fumigation over spraying or dusting, of course, is that the results secured are usually more complete, inasmuch as the lethal vapors of the fumigant can reach all insects in cracks and crevices whereas sprays and dusts cannot. The use of contact oil sprays of the household fly spray type are valuable adjuncts for controlling moderate to light infestations of household insects. Dr. Potter, of the Department of Entomology, at the Imperial College of Science and Technology, in England, has shown that an atomized white oil fortified with pyrethrum can be used with advantage for reducing infestations of agricultural produce in places where such produce is stored (6). Thus 30,000 tons of dried fruits in warehouses in London, Liverpool, Manchester and Glasgow were treated with "complete success" by this method. The advantages of spraying, according to Dr. Potter, are that it eliminates interfering with the normal routines of storage and handling of goods, provides "continuous protection from infestation during periods when this is likely to occur," and compared with fumigation, is cheap and safe to human beings.

On the other hand, fumigation presents a quick means of exterminating serious infestations of pests and will undoubtedly continue to be very widely used. Wardle in his "Problems of Applied Entomology," (7) states that the "ideal fumigant would be a vapour violently toxic to the infesting organism whose elimination is desired, but entirely innocuous to the object whose freedom from infestation is required; that is to say, it should be violently insecticidal or

(*Turn to Page* 125)

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INSECTICIDE STICKERS

Use of rosin-mineral emulsion as a sticker for agricultural insecticides

By R. D. Chisholm

Bureau of Entomology & P.Q., U.S.D.A.

ROSIN-RESIDUE emulsion[1,2] has been in use for several years as a sticker for derris, and has been demonstrated generally to be effective. Its use has been somewhat limited, however, because rosin residue is not readily available in all the fruit- and vegetable-growing districts. Rosin residue[3], or pine-oil foots, is the residue left after steam distillation of an extract from finely shredded pine wood that has been subjected to a preliminary steam distillation.

During the Summer of 1937, investigators were conducted to find a sticker for derris and other agricultural insecticides which would have the necessary adhesiveness and at the same time have a large number of sources of supply in the regular market. Among the materials considered, commercial rosin oil met these requirements, but the cost of the better grades was so high as to limit its usefulness. However, emulsions of rosin oil may be used if they can be obtained at a sufficiently low price. Mixtures of rosin and mineral oil also met these requirements and are easily prepared from low-cost materials.

In laboratory tests of such mixtures, rosin was dissolved, with the aid of heat, in a heavy lubricating oil (S.A.E. 40), a light lubricating oil (commonly called flushing oil), and a kerosene-type oil. The amount of oil was adjusted to be 20, 40, 60, and 80 per cent of the mixture. It was found, on cooling to room temperature, that the mixture containing 40 per cent of light lubricating oil had physical properties somewhat similar to those of rosin residue, and this mixture was used in the preparation of a stock emulsion. For special uses it is possible to vary the ratio of mineral oil to rosin and thus change the character of the adhesive.

Emulsions were prepared which contained by weight 50, 60, 66-2/3, and 75 per cent of this mixture, with ammonium caseinate as the emulsifier. After 30 days the 66-2/3 and 75 per cent emulsions became so viscous that it was difficult to dilute them with water. On the other hand, the 50 per cent emulsion showed a tendency to form into layers. The 60 per cent emulsion remained uniformly stable and offered no difficulty to dilution with water.

This emulsion was prepared according to the following formula:

	Pounds
Rosin	36.0
Light lubricating oil	24.0
Water	35.2
Casein (80-mesh)	4.0
Ammonium hydroxide, sp. gr. 0.90	0.8

The rosin is first dissolved in the oil with the aid of heat and stirring to form a uniform solution. The mixture is then cooled to about 140° F. The water is heated to the same temperature and the casein added with vigorous agitation. The ammonia is introduced after sufficient time has been allowed for the casein to swell. As soon as the casein is completely dispersed, which takes only a few minutes, the rosin-mineral oil mixture is added slowly, with continued agitation, until a creamlike emulsion is formed.

This emulsion has good storage qualities, as it has remained stable in the laboratory for several months. Under certain conditions, however, it might be necessary to add a preservative.

Laboratory spraying and washing tests[4] were made to compare the amount of derris deposited from a spray containing the rosin-mineral oil emulsion with the amount deposited from a spray containing rosin-residue emulsion. The sprays were prepared at the rate of 3 pounds each of derris and emulsion in 100 gallons of water. The initial deposit from the spray containing the rosin-mineral oil emulsion was 15 per cent greater than that from the spray containing the rosin-residue emulsion, and after the washing tests it was more than 25 per cent greater.

Orchard tests were conducted to compare the effectiveness of these two emulsions as stickers for derris and also to determine whether the former caused injury to foliage. The sprays were prepared as in the laboratory tests. Peach and apple trees were sprayed the first part of August. Observations were made as soon as the residues were dry and at intervals

(*Turn to Page* 125)

*The writer wishes to acknowledge with thanks the cooperation of various members of the staff of the Japanese Beetle Laboratory of the Bureau of Entomology and Plant Quarantine during these studies.

[1]Goodhue, L. D., and Fleming, W. E. Stickers for derris as an insecticide spray. Jour. Econ. Ent. 29: 580-583. 1936.

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Pyrethrin Determinations

(*From Page* 98)

required 4.97 cc. of N/20 alkali for neutralization. Ten cubic centimeters was mixed with 20 cc. of N/20 barium hydroxide, diluted to 75 cc. with water, acidified with 1 cc. of 6 per cent hydrochloric acid, and the distillation carried out as in the practice of the method. The 75 cc. of distillate required 4.89 cc. of N/20 alkali for neutralization, corresponding to an observed recovery of 98.5 per cent. A mixture of the reagents in the same proportions was distilled in the same manner, and the 75 cc. of distillate required 0.15 cc. of N/20 alkali. The corrected titration is therefore 4.74 cc., or an absolute recovery of 95.4 per cent. The distillate was redistilled and the collected distillate titrated. For neutralization 4.75 cc. of N/20 alkali was required exclusive of any blank, which for 75 cc. of water would be 0.05 cc.

Errors in the Recovery of Chrysanthemum Dicarboxylic Acid Monomethyl Ester.—Anal. Titration 0.0556 g. substance in 10 cc. of ethanol required 5.15 cc. of N/20 alkali. Mol. wt.: Calcd., 212.2; found, 216.0.

An ethanolic solution of the ester acid was prepared, of which 10 cc. required 4.17 cc. of N/20 alkali for neutralization. Ten cubic centimeters of the solution was made up to 75 cc. with 20 cc. of N/20 aqueous barium hydroxide, 10 cc. of ethanol and water, and after acidification the distillation was carried out as usual. The 75 cc. of distillate required 0.28 cc. of N/20 alkali. After correction for the reagent blank (0.16 cc.) the acid that distilled corresponded to 0.12 cc., which represents the acid lost on distillation, but which in practice would increase to that extent the apparent pyrethrin I content of the sample. The nonvolatile residue was extracted with ether as in the directions for the method, and the acid titrated. For neutralization 4.00 cc. of N/20 alkali was required, or an observed recovery in the undistilled portion of 96.0 per cent. A blank experiment was made by adding 1 cc. of 6 per cent hydrochloric acid to 75 cc. of distilled water and extracting the solution with ether and washing under the prescribed experimental conditions. The washed ether extract required 0.12 cc. of N/20 alkali. The corrected recovery of the ester acid was therefore 4.00 cc. —0.12 cc. = 3.88 cc., or 93 per cent, exclusive of the increment that distilled over.

Ten cubic centimeters of the above stock solution, corresponding to 4.17 cc. of N/20 alkali, was mixed with 20.73 cc. of N/20 aqueous barium hydroxide, and allowed to stand for 20 minutes, it then required 16.45 cc. when titrated with N/20 hydrochloric acid. The difference, 4.28 cc., shows an increase of only 0.11 cc. due to saponification. Another 10 cc. of the solution, corresponding to 4.17 cc. of N/20 alkali, was mixed with 20 cc. of N/20 barium hydroxide, allowed to stand for 15 minutes, or about the time the ester acid ordinarily remains in contact with alkali solution. The solution was then diluted to 75 cc. and, after acidification with 1 cc. of 6 per cent hydrochloric acid, was distilled. The 75 cc. of distillate required 0.11 cc. of N/20 alkali for neutralization after correction for a previously determined blank of 0.16 cc. The undistilled residue, when extracted with ether in the usual manner and the acid titrated, required 4.32 cc. of N/20 alkali, after subtraction of the blank of 0.12 cc., owing to the hydrochloric acid remaining in the ether. The total acid recovered, including the small increment that distilled over, corresponded to 4.44 cc. of N/20 alkali, or an increase of 0.26 cc., probably due to slight saponification. The observed uncorrected titration (4.44 cc.) of the undistilled extracted ester acid is 106 per cent of the titration of the original solution. The increase due to the residual hydrochloric acid is compensated for by the slight loss of ester acid on distillation.

In general these small errors, some of which tend to neutralize each other, collectively tend to increase slightly the apparent pyrethrin II content of a given sample, but the difference between the observed and corrected values for both pyrethrins is smaller than is claimed for the precision of the method.

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Dihydrorotenone

Among the numerous derivatives of rotenone thus far studied, only dihydrorotenone retains the high insecticidal action of the parent compound. The apparently greater stability of this derivative toward oxidation and light than that of rotenone has led to its commercial production. Catalytic hydrogenation of rotenone produces, in addition to dihydrorotenone, the nontoxic hydrogenation products rotenonic acid, dihydrorotenonic acid, and dihydrorotenol. The best method for determining dihydrorotenone in a mixture of such hydrogenation products is the colorimetric method of Goodhue in which a red color is produced with the compound by treatment with an alkaline nitrite followed by a mineral acid. Detailed directions for applying the method are given. Lyle D. Goodhue and H. L. Haller. *Ind. Eng. Chem.*, Anal. Ed. **12**, 652-4 (1940).

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(*From Page* 105)

showed a solid content of only 7 per cent. This is not an isolated case. We have had many similar experiences with a number of sanitary supply products. It is our opinion that formulas printed on labels would serve, in part, to correct such abuses. Such labeling also should help to educate the consumer by informing him what he is buying under different trade names. You may say that this would hurt your business. Well, now, I'm not here to tell you how to fool the suckers and make money. I was invited to present my views as a consumer. You are hearing them. Like them or not, they are being stated this afternoon.

No doubt many arguments can be advanced by you against these statements and good arguments at that. You have been listening to a skeptical consumer who appreciates the values of your industry, who wishes to see it progress and develop still further, but who believes that it harbors some abuses, bad practices, and unethical policies that ought to be corrected. It is my opinion that in the future your industry must think more in terms of consumer needs and values with less emphasis on money profits only. Your industry is a large one; it is fundamentally sound; it performs a vital function in our everyday life. It can progress and prosper on an honest and ethical basis, without resorting to hokum, buncombe, and bushwah.

I should prefer to see your industry put its own house in order and take proper steps to correct abuses. I am sure that the best leadership among you feels the same way. The editorial policy of your magazine SOAP appears to favor that course and it certainly cannot be accused of failing to look after your interests. I am inclined to believe that the editor will not support my views regarding labels and formulas for your products, but I am sure that he will agree that exaggerated, fictitious, and deceitful advertising statements and claims are a liability and not an asset to your industry.

I shall continue to attempt, in my own small way, to promote the proper use of effective sanitary supplies. As I see the problem, it is chiefly one of educating the consumer so that he will know:

1. What he needs,
2. How he shall use it most effectively, and
3. How he may obtain it to best advantage.

In this educative process, the consumer can be informed about the ingredients and makeup of materials. For example, he may as well know that sodium fluoride is an excellent and common cockroach poison, and that he can buy it under the technical term without paying an exorbitant price for a trade name. The consumer also may be informed that a small percentage of rotenone can be mixed with the sodium fluoride to make a still better cockroach poison. He can be told that borax is much less efficient. He ought to be told that sodium fluoride is a poisonous material and it is well to advise him to try the artificially colored product.

The consumer can be told that trisodium phosphate is a good emulsifying and all round cleaning agent, and that it can be purchased under that technical term at a fair price, instead of at a high price for a trade brand name. The consumer likewise needs to know that too much of this material in a solution may injure painted and varnished surfaces, and that over a period of time it may injure linoleum, terrazzo, or marble surfaces. He also should know the values, disadvantages, and uses of other types of alkalis.

Along the same line, the consumer ought to learn the "what," and "why," and "how" and "when" to use the various different types of sanitary supplies. In my opinion, it is a responsibility of your industry to help educate the consumer in this direction. Now note that I said "educate," and not "propagandize." You are doing altogether too much of the latter at present. And that is why many consumers hesitate to believe you even when you tell the truth.

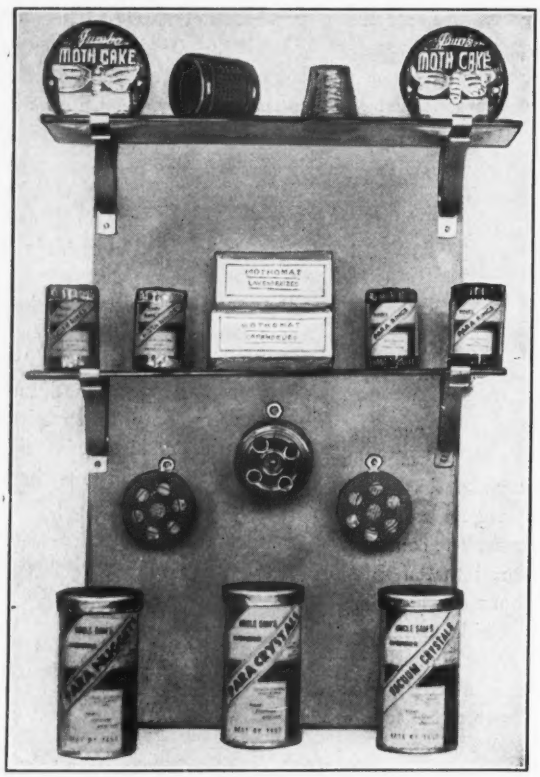
Now that my spleen has been partially vented, may I say that this paper is not meant to be unkind to your industry. Quite the contrary; it is my hope that it may prove helpful by pointing out conditions that have caused many consumers to distrust your business. I believe that practices and tactics might be changed to promote a better understanding and a nicer spirit of confidence. May I close by offering a few suggestions?

1. Limit your advertising claims and statements to acceptable truths. (In the vernacular of slang, cut your baloney much thinner.)
2. Develop a breed of intelligent, informed, and truthful salesmen, but don't loosen even them on us in large packs.
3. Sell us more of your materials under proper technical names and restrict the trade brand hocus-pocus.
4. Label your products so that consumers can know what they might expect to receive—and then deliver the right goods.
5. Try to drive the shyster element out of your industry.
6. Help to educate the consumer by presenting factual information he needs to know. If he happens to select your pet trade brand products, let this be incidental.
7. Market your products at a fair price level—fair to us and fair to you. Let us be your customers, not your victims.
8. Continue your research and progressive development of new and more effective products.
9. Be more social minded, and less profit minded.

To the many good people of your industry, may I apologize for any inferential unkindness spoken by me today. But to any others (if there be any) if the shoe fits, I hope you develop bunions.

—— ♦ ——

A new use for rotenone, suggested by Dr. Carmen C. Thomas and Dr. Evelyn E. Miller of the University of Pennsylvania School of Medicine, is for the treatment of scabies. An Irish moss lotion containing 1-2 per cent of rotenone secured prompt cure of 24 resistant cases. *Manufacturing Chemist*, **11**, 270 (1940).



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NEWS...

Harwood Joins Hess-Clark

Dr. Paul D. Harwood, formerly in charge of anthelmintic investigations for the Bureau of Animal Industry of the Department of Agriculture, Washington, has become associated with Dr. Hess & Clark, Inc., Ashland, Ohio. Dr. James E. Guthrie formerly of the Bureau of Animal Industry at Beltsville, Md. has also joined the Hess & Clark technical staff. These two well-known experts on live stock diseases will continue their investigational work on parisitology and chemotherapy at the Hess & Clark laboratories at Ashland, particularly in the newer applications of phenothiazine.

New Shell Cresylic Plant

Shell Oil Co., New York, announced the opening on December 1, of its new plant at Martinez, Calif., for the production of cresylic acids from petroleum. With the beginning of production at the new cresylic refinery at Martinez, the output of these materials by Shell is being doubled. All grades of petroleum cresylic acids are being manufactured at the new plant.

Shell Oil has also announced plans for the construction of a new plant at Wood River, Ill., for the production of deodorized naphthas, drycleaning, and other petroleum solvents including a new type deodorized fly spray base oil. The new deodorized solvent plant will cost over a half-million dollars and will go into operation next Summer, according to B. G. Symon, technical products manager for Shell.

Names New Distributors

R. M. Hollingshead Corp., Camden, N. J., recently named two new distributors for the "Whiz" line of merchandise: Peerless Sal-O-Well Co., Buffalo, N. Y., and Edward L. Canter, Inc., Springfield, Mass., according to an announcement from the company. Bertram R. Hartmann was appointed recently as the company's district representative in central New Jersey. He was formerly connected with Creco Co. and more recently with General Equipment & Supply Co.

Release Phenothiazine Patent

A patent recently granted to L. E. Smith, a chemist of the Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, covering the use of phenothiazine as an insecticide, has been released to the free use of the public. According to large-scale tests conducted by the bureau since 1934, phenothiazine is toxic to several important insect pests, notably the codling moth, and has the advantage that it does not leave a dangerous residue on fruit sprayed with it. An effective way to use it for satisfactory control has not been worked out, however. Some experimentation in the use of phenothiazine as a bactericide for treating certain internal infections of human beings is now being carried out by department zoologists.

FTC Constrains Carbola

Carbola Chemical Co., Natural Bridge, N. Y., has entered into a stipulation with the Federal Trade Commission in which it agrees to stop representing that its preparation, "'CCC Rat Killer," attracts both rats and mice because it is sweetly flavored; that it attracts, will be eaten by, or kill mice of other kinds than house mice; that it kills entire families of rats or mice, and, that the preparation is absolutely safe for use where small children, pets or other animals might eat it.

Talks on Ship Fumigation

Milford H. Oachs, Exterminating Materials Co., New York, and president of the Professional Exterminators Association, spoke on "Safety In Ship Fumigation" at a luncheon meeting of the Marine Section of the National Safety Council, in New York City, December 19th. He listed twenty-two precautions that the experienced operator should observe in ship fumigation.

Monsanto Inaugurates Pensions

Monsanto Chemical Co., St. Louis, recently inaugurated a pension plan for its employees providing for retirement at the age of 65 in the case of men and 60 in the case of women. To qualify for company pensions, employees must have ten or more years of service with the company by the time they retire.

A program promoting the use of "Lysol" in the field of gas station rest room sanitation will receive increasing attention over the coming year by Lehn & Fink Products Corp. Advertising copy will run in a long list of women's magazines early in the 1941 Summer touring season suggesting that women drivers stop at service stations that keep their rest rooms clean with "Lysol." Advertising publicizing the program will also be addressed to service station operators.

27TH ANNUAL DINNER
NATIONAL ASSOCIATION OF INSECTICIDE
AND DISINFECTANT MANUFACTURERS, INC.
HOTEL ROOSEVELT DEC. 3, 1940

New Para Manufacturer

Delta Chemical Manufacturing Co., Baltimore, has recently started the manufacture of paradichlorbenzene, as well as the by-products, monochlorbenzene, orthodichlorbenzene, trichlorbenzene and hydrochloric acid. The company, of which D. H. Koumjian is general manager, has previously been active in the laundry supply field, manufacturing calcium and sodium hypochlorite.

Federal Names Flanagan V.-P.

M. J. Flanagan, formerly sales manager of Federal Varnish Co., Chicago, was recently appointed vice-president of the company by the board of directors. Mr. Flanagan will continue as sales director in addition to his duties as vice-president.

Insecticide Census, 1939

Census figures on the manufacture of insecticides, disinfectants and allied chemicals, for 1939, come a little closer to picturing the true size of this industry than did the similar census conducted in 1937. The number of reporting establishments covered by the census tabulation jumped from 616 in 1937 to 774 in 1939, an increase of 25.6 per cent. This indicates, apparently, a somewhat better coverage of the industry in compiling the census figures rather than an actual 25 per cent increase in the number of establishments in two short years. As shown by the census, wage earners primarily engaged in manufacturing insecticides, fungicides, deodorants, disinfectants and related industrial and household chemicals in 1939 numbered 5,017, an increase of 5.4 per cent over the 4,760 reported for 1937, and their wages, $5,393,213, exceeded the 1937 figure, $5,224,893, by 3.2 per cent. The value of products of the industry for 1939 was reported at $93,443,777, an increase of 17.3 per cent compared to $79,630,861, reported for 1937.

Interdonati Joins Penick

Henry R. Interdonati, active in the chemical and drug industry in New York for the past nineteen years, recently joined S. B. Penick & Co., New York, as manager of the company's special product department. Mr. Interdonati began his business career in 1921 when he entered the employ of Charles L. Huisking & Co. with which company he was associated for fourteen years in the sales department. In 1935, he moved to Enequist Chemical Co., Brooklyn, working there until he joined the Penick organization.

Drug & Chemical Banquet . . .

Everybody will be there! Have you made your reservations yet? Meet the whole trade in one place at one time . . . Waldorf-Astoria Hotel, New York, March 13, 1941 . . . but make your reservations now. Write or phone John C. Ostrum, New York Board of Trade, 41 Park Row, New York. Do it now!

Cenol Stipulation

Cenol Co., Chicago, engaged in selling rat-killing preparations, has agreed in a stipulation with the Federal Trade Commission, to cease advertising that "Cenol Squill Powder" will kill any species of mice except house mice, or that it is the leading "raticide" in the country and is superior to similar preparations containing the same quality and quantity of red squill. The company also agreed to stop claiming that the barium carbonate content of "Cenol Rat Destroyer" has the effect of driving poisoned rats out of doors to die.

SOCMA Re-Elects Officers

All the officers of the Synthetic Organic Chemical Manufacturers Association were re-elected at the recent meeting of the association in New York. Those re-elected were: president—August Merz, Calco chemical division of American Cyanamid Co.; 1st vice-president, Dr. E. H. Killheffer, E. I. duPont de Nemours & Co.; 2nd vice-president, Dr. F. G. Zinsser, Zinsser & Co.; treasurer, Ralph E. Dorland, Dow Chemical Co., and secretary, C. A. Mace.

Windsor Wax Builds

Windsor Wax Co., Hoboken, N. J., has completed constructon of a new office building adjacent to its plant at 611-617 Newark Street, which will be the site of its main office and laboratory. The New York sales office will be continued at 53 Park Place.

Drop Hollingshead Charges

The Federal Trade Commission recently dismissed a complaint of almost two years' standing against R. M. Hollingshead Corp., Camden, N. J., which had charged the company with the use of unfair methods of competition and deceptive trade practices. The practice against which the complaint was originally directed was a practice known as "lifting," which, it is said, had been used by the company since 1937 or 1938. In "lifting," wholesale or jobber customers of the Hollingshead firm's "Whiz" line of soaps, polishes, etc., were allowed to select from their own stocks any goods of the same general classification which they chose and could ship them to Hollingshead with a statement of their cost. Thereupon the customer was credited with the full amount of such cost with the condition that the credit be applied within one year against purchase of items in the "Whiz" line.

This type of agreement was made both with dealers who were carrying "Whiz" items at the time of the transaction and with dealers who were buying them for the first time, and contemplated return for credit of goods manufactured by Hollingshead or by competitors. According to the FTC records, "lifted" goods were resold for cash in job lots at low prices, were junked as unsalable or were used by the Hollingshead company in the manufacture of its own goods.

Quoting from the commission's opinion in dismissing the complaint: "There is no question but that the practice of "lifting" competitors' merchandise from distributors' shelves, and disposing of it in a manner which permits its access again into the channels of distribution at distress prices is detrimental to competitors. Its immediate effect may be to reduce the possibility of the competitor selling more goods to the distributor. A detrimental effect is more apparent when the "lifted" merchandise reappears on the market at reduced prices.

"In the absence of a showing of substantial injury to competition, or of an intent or effect of injuring competition by harassing competitors or destroying the good will adhering to their merchandise, we cannot conclude that the practices here are unfair methods of competition."

Missouri P.C.O.s Meet

The Missouri Pest Control Operators reviewed all the pests that had been taken up for study during the year at a recent meeting of the organization in Whitten Hall at the University of Missouri. Discussions were led by: Charles Denny, Charles Denny & Co., St. Louis; P. H. Burnett, Getz Exterminators, Inc., Kansas City; Charles Bowden, Chec Products Co., St. Louis; Roy McCullough, Modern Fumigating Co., St. Louis; Dr. Leonard Haseman, University of Missouri; Philip C. Stone, University of Missouri; and William F. Exner, Termite Control Co., St. Louis. The date of the next meeting was set for March 28, 1941, to coincide with the meeting of the Central States Association of Economic Entomologists.

Russell R. Sloan Dies

Russell R. Sloan, 59, former vice-president and treasurer of Dodge & Olcott Co., New York, and former president of the defunct importing firm of Russell Robinson Sloan & Co., died recently in New York. Mr. Sloan, has in recent years been business adviser to Compagnie Duval, New York, importers of essential oils.

Annual Fritzsche Meeting

Fritzsche Bros., Inc., New York, recently held its annual sales conferences,—a six-day meeting of executives, department heads and salemsen at the Hotel New Yorker. Quiz sessions and meetings were held daily. A feature of the sessions was a motion picture presentation of essential oil production in the United States shown by Dr. Guenther to the firm's entire personnel. Moving pictures covered the production of peppermint, wintergreen, wormwood, erigeron, tansy, sweet birch, sassafras, dill, cedarwood, and other domestic oils. A film record of Dr. Guenther's flying trip to the West Indies, Central and South America and Mexico was also shown. Another event of the week was an inspection trip to the company plant in Clifton, N. J., where manufacturing facilities have recently been enlarged by the addition of new distilleries and control laboratories. The meeting concluded with a dinner dance at the Hotel New Yorker. Some 270 employees were present, the largest gathering in the history of the company.

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CRESYLIC ACID

PETROLEUM ORIGIN

MAXIMUM GERMICIDAL ACTION—MINIMUM SKIN IRRITATION

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We offer petroleum sulphonates, sometimes termed mahogany soaps or naphthenic acid soaps, either in crude form or refined to a degree of purity previously unobtainable. Special bases manufactured from purified petroleum sulphonates are also available.

For further information and samples write:

L. SONNEBORN SONS, INC.

88 LEXINGTON AVENUE NEW YORK

Refiners of White Mineral Oil and Petrolatum

C. Campbell Baird 1880-1940

C. CAMPBELL BAIRD, president of Baird & McGuire, Inc., Holbrook, Mass., and a former president of the National Association of Insecticide & Disinfectant Manufacturers, died at his home in Norwell, Mass., on December 21. Mr. Baird was one of the founders of the Association and in its early years, it was only through his generous contributions of time, energy and financial support that the organization continued to exist.

Mr. Baird was born in Gourock, Scotland, in 1880, his early schooling being received in Edinburgh. He left Scotland at the age of fourteen and came to Halifax, N. S., landing there without knowing a soul. After a year he journeyed on to Boston and went to work for the firm of Samuel Cabot, where from 1904 to 1914 he was chief chemist. He founded Baird & McGuire, Inc. of Holbrook, Mass., in 1914 with James H. McGuire, who died just two months ago. Ten years later, in 1924, he formed Baird & McGuire, Inc. of St. Louis, an affiliated company.

Mr. Baird was married in 1907 to Miss Marion Gordon MacChlerie. She survives him, with their three sons, Cameron M., Alan C. and Gordon M. Baird. Gordon Baird, who is a member of the Board of Governors of the N.A.I.D.M. will succeed his father as the active head of Baird & McGuire, Inc., Holbrook.

Besides his interest in his own business, and the N.A.I.D.M., Mr. Baird was also active in other organizations. He was the founder of the Randolph-Holbrook Rotary Club and a director in the Randolph Trust Co., Randolph, Mass. He was a Mason, belonging to the Commandery and the Shrine. His hobby was Cape Cod, where he made his Summer home for many years.

In the N.A.I.D.M., Mr. Baird served in many capacities over a long period of years. He was president (1923 - 1924) and also acted at one time as secretary of the association. He served for many years as a member of the Board of Governors of the association, retiring several years ago at his own request. His death is a deep loss to the American disinfectant industry and to every member of the N.A.I.D.M.

Name Sullivan Canco Head

Maurice J. Sullivan, executive vice-president, was appointed president of American Can Co., New York, at a recent meeting of the executive committee. Mr. Sullivan succeeds the late Dr. Herbert A. Baker. At the same meeting, T. N. Anderson, former vice-president and comptroller, became executive vice-president and comptroller and D. W. Figgis, former vice-president, was named executive vice-president. Mr. Sullivan, a native of Chicago, has been associated with the company since its organization in 1901, serving successively as salesman, St. Paul sales manager, San Francisco district sales manager and, in 1923, becoming vice-president in charge of the Pacific Coast. He has also been a director of the company since 1923. C. H. Black, formerly general manager of sales, general line, has been appointed vice-president in charge of sales.

St. Louis P.C.O.s Elect

At a recent meeting of the St. Louis Pest Control Association held at the York Hotel, the following officers and directors were elected for the year 1941: president, William F. Exner, Termite Control Co.; vice-president, James C. Logan, Logan Termite Control Co.; secretary, G. V. Davis, Termite division, Huttig Sash & Door Co.; directors, T. C. Raley, Getz Exterminators, Inc.; L. H. Fleming, St. Louis Exterminator Service Co.; W. E. Martin, Bug Death Products Co.; Charles Denny, Charles Denny & Co. The annual banquet and installation of officers will be held January 14, at the York Hotel.

V. J. Dolan Build Addition

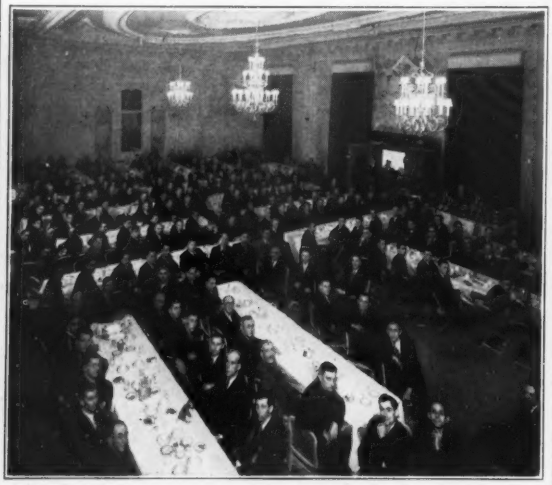
V. J. Dolan & Co., Chicago, recently completed a $7,500 addition to their plant at 1832 North Laramie Ave., to facilitate manufacture of their line of waxes, polishes, sealers and other products.

Penick in New Chi. Quarters

S. B. Penick & Co., New York, recently acquired new quarters for the company's Chicago branch which will house offices, warehouse and processing activities. A brick building at 735 W. Division Street with approximately 50,000 square feet of floor space has been modernized to accommodate the Penick plant. Complete railroad siding facilities will expedite deliveries. In charge of the branch office and warehouse is Harold Meyer who has been with the company since 1926. After serving as a salesman in New York, he was moved to Chicago in 1934 to open a branch office.

FEDERAL

FEDERAL FINISHES FOR FLOORS IN '41



ORIGINAL NO-BURN GYM FINISH

An extremely hard finish that will not rubber burn. It resists most severe use with such remarkable durability that it may be used on all exterior and interior surfaces.

FED-CO PENETRATING SEALER

Penetrates and seals the wood. Used largely by chain stores and in other places where large surfaces are subject to extreme traffic as it makes floors easy to maintain economically. Easily applied.

LIGHTNING LUSTRE

A wear and water resisting, self-polishing, high lustre, carnauba wax base finish. Provides extra heavy, even protective film for all kinds of floors and flooring.

MOP-VAR

A Penetrating Sealer to be applied with mop. Easily applied, durable, easily and economically maintained.

MANY SPECIALIZED PRODUCTS

Ask us about Federal Floor Finishes and other products—Gym Finish Marking Enamels, Traffic Paint, Terrazzo Sealer, Rubber and Linoleum Lacquers, Oil Base Waxes, etc.

Write for Descriptive Literature

FEDERAL VARNISH CO.

FLOOR FINISH DIVISION

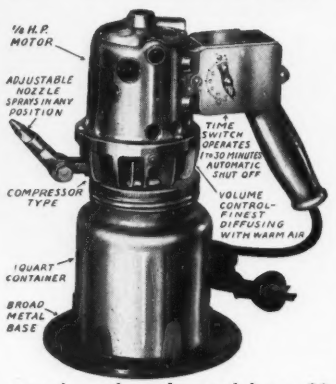
DEPT. 141 331-337 S. Peoria St. CHICAGO

9 DIFFERENT BREUER ELECTRIC SPRAYERS

The Right Sprayer For Every Customer

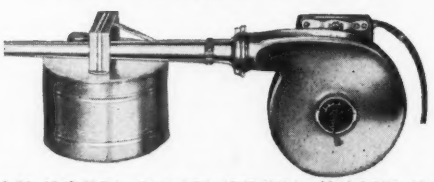
Whether your customer needs an economical sprayer for the occasional small job, or a powerful machine for daily spraying in a great warehouse, there is a Breuer quality sprayer which exactly fits his needs. The nine Breuer Models include sizes from 1/8 H.P. to 1 H.P.—capacities from one pint to one gallon—compressor and fan types—automatic and toggle-switch models.

BETTER THAN EVER! MODEL 54


1/8 H.P. MOTOR
ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
TIME SWITCH OPERATES IN 30 MINUTES AUTOMATIC SHUT OFF
COMPRESSOR TYPE
VOLUME CONTROL-FINEST DIFFUSING WITH WARM AIR
1 QUART CONTAINER
BROAD METAL BASE

The most popular model in the TORNADO line has now been made more convenient, practical and efficient than ever. It has a husky GE Motor, adjustable nozzle, air volume control to regulate density of spray, one-quart metal container, broad metal base, 20 ft. of rubber covered cord. Patented principle warms liquid above room temperature for maximum diffusion and kill. Thirty minute automatic time switch. A quality compressor-type sprayer at low cost.

FOR LARGE AREAS



Model 6A (1/3 H.P.) Model 8A (3/5 H.P.) Model 10A (1 H.P.)

These powerful blower-type sprayers project the spray instantly for distances of 20 to 40 feet, giving fast, thorough coverage of large areas. The spray easily reaches remote corners and high ceilings. One gallon metal container. Ball bearing GE Motors—no oiling. Particularly recommended for warehouses, theatres, dairy barns and other large buildings.

Write today for details of the complete Breuer line and our liberal discounts to the insecticide industry.

BREUER ELECTRIC MFG. CO.

5118 N. RAVENSWOOD AVENUE CHICAGO, ILLINOIS

We do not sell insecticides. Our business is manufacturing sprayers. Patented in U. S. A. and Foreign Countries.

Disinfecting Air Raid Shelters

Public health authorities in Great Britain, it is reported by the London correspondent of *Soap and Sanitary Chemicals*, are becoming more fully alive to the danger of infection in crowded shelters and measures are being taken to reduce the risk of these shelters becoming focal points of disease. Two methods are being adopted in London for disinfecting the larger shelters. The first consists of spraying the shelter air at regular intervals with a dilute solution of a cresylic disinfectant in the form of a fine mist. The second method depends upon the thorough periodic cleansing of shelter walls, seats and floors with a strong disinfectant.

One well known British manufacturer, Messrs. Newton, Chambers and Co., Ltd. of Sheffield, has introduced a specially designed spray nozzle which can be fitted to the standard stirrup pump used for extinguishing fires caused by incendiary bombs. This nozzle enables any stirrup pump to be converted in a few seconds into an effective sprayer. The fitting does not in any way interfere with the normal use of hte stirrup pump. It can be fitted and removed in a matter of seconds. When not in use it can be carried by a clip on the barrel of the stirrup pump just below the handle.

The ideal disinfectant for air raid shelters must be able to reduce air borne dust to an absolute minimum and have a freshening effect on vitiated air. The latter is particularly important in the case of shelters which have been occupied for more than three or four hours. The spray, though it does not make the shelters damp, leaves a thin film of the disinfectant on the floor, walls and seats, destroying germs.

"Flu-Mous-Ded" Stipulation

The Federal Trade Commission recently accepted a stipulation from F. Lucas, New York, who agreed to cease representing that "Flu-Mous-Ded" is sure death to mice, that mice destroyed by it will leave no decomposition odors, that it is a most effective rodenticide, and that it is used everywhere by pest control operators, warehousemen, feed men and in food packing plants.

Insect Control

(*From Page* 111)

fungicidal or bactericidal, but entirely harmless to plants, to other animals, to wood, metal, leather or textile surfaces . . ." Because plants are readily injured by small concentrations of certain gases, the problem of finding safe, yet effective, fumigants for killing insect pests of greenhouse plants is no easy matter. The vapors of nicotine, however, are relatively safe and give good control of certain pests. Dichlorethyl ether, previously referred to as a soil fumigant, offers possibilities for use as a greenhouse fumigant according to workers at the Boyce Thompson Institute. Aphids, red spider, gladiolus thrips and adult white fly were successfully controlled by proper use of this material.

Of the various materials used for commercial fumigation of warehouses, homes, granaries and similar places, many, while effective, are decidedly unsafe to humans or their common use is prohibitive because of high cost. Thus, hydrocyanic acid is safe only in the hands of skilled or experienced operators. Sulfur dioxide kills certain pests but its uses are limited. Carbon bisulfide is excellent, but is highly explosive when mixed with air; the use of chlorpicrin, a commonly-used fumigant, is also attended with dangers when handled carelessly. These facts have stimulated research for new fumigants, out of which has come ethylene dichloride, trichlorethylene, and, most recently, methyl bromide.

The tie-up between these problems of the economic entomologist and the chemist is close. Indeed, we have here an excellent illustration of the interdependence of two sciences. The modern economic entomologist, concerned in controlling insect pests with chemicals, finds a broad chemical training in inorganic and organic chemistry prerequisite to any real research project. Under no circumstances can he dispense with the aid of the chemist. The fruition of the joint labors of the entomologist and the chemist have been laudable. Discoveries of great benefit to mankind have been made. Serious pests have been controlled. New, more effective, safer chemicals are being developed. But the field is still undeveloped. A great deal of research is still needed, and in spite of the real progress that has already been made, chemistry will in the future develop new and better methods of insect pest control.

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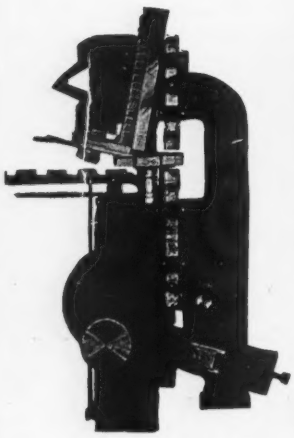
Insecticide Stickers

(*From Page* 113)

of a few days over a period of three weeks. No spray injury was observed at any time. The amount of the initial derris deposits and the persistence of the deposits after a heavy rain appeared to be the same for the two sprays.

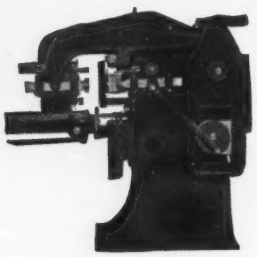
The rosin-mineral oil emulsion has been demonstrated to be at least equal to rosin-residue emulsion in effectiveness as a sticker for derris, and it may be valuable for use with other insecticides. It is prepared from low-cost materials which are available from a large number of sources in the general market. Furthermore, the character of the emulsion or the results obtained may be modified to meet special conditions by changes in the type of mineral oil, the ratio of rosin to mineral oil, and the kind and quantity of emulsifier.

Special Offerings of **SOAP MACHINERY** *Completely Rebuilt!*

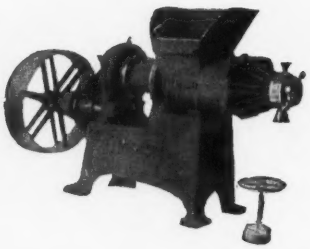


Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

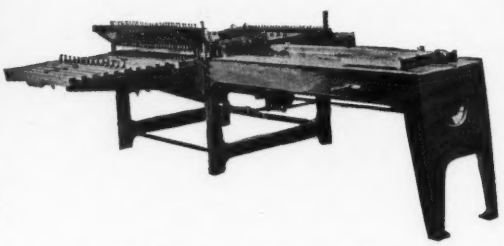
H-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed



2 Automatic Power Soap Cutting Tables.

INVESTIGATE THESE SPECIAL BARGAINS

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Johnson Automatic Soap Chip Filling, Weighing and Sealing Machines for 2 lb. and 5 lb. Packages guaranteed in perfect condition.

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ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

- H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
- Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
- Ralston Automatic Soap Presses.
- Scouring Soap Presses.
- Empire State, Dopp & Crosby Foot Presses.
- 2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
- H-A 4 and 5 roll Steel Mills.
- H-A Automatic and Hand-Power slabbers.
- Proctor & Schwartz Bar Soap Dryers.
- Blanchard No. 10-A and No. 14 Soap Powder Mills.
- J. H. Day Jaw Soap Crusher.
- H-A 6, 8 and 10 inch Single Screw Plodders.
- Allbright-Nell 10 inch Plodders.
- Filling and Weighing Machine for Flakes, Powders, etc.
- Steel Soap frames, all sizes.
- Steam Jacketed Soap Remelters.
- Automatic Soap Wrapping Machines.
- Glycerin Evaporators, Pumps.
- Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
- Perrin 18 inch Filter Press with Jacketed Plates.
- Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
- Day Grinding and Sifting Machinery.
- Schultz-O'Neill Mills.
- Day Pony Mixers.
- Gardiner Sifter and Mixer.
- Proctor & Schwartz large roll Soap Chip Dryers complete.
- Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
- Day Talcum Powder Mixers.
- All types and sizes—Tanks and Kettles.
- Ralston and H-A Automatic Cutting Tables.
- Soap Dies for Foot and Automatic Presses.
- Broughton Soap Powder Mixers.
- Williams Crutcher and Pulverizer.
- National Filling and Weighing Machines.

Send us a list of your surplus equipment—we buy separate units or complete plants.

NEWMAN TALLOW & SOAP MACHINERY COMPANY

1051 WEST 35th STREET, CHICAGO Phone Yards 3665-3666

Our Forty Years Soap Experience Can Help Solve Your Problems

CLASSIFIED ADVERTISING

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Specialty Merchandising:—Man with fine sales record in the field of merchandising and marketing chemical specialties, insecticides, automotive accessories, and petroleum products, desires connection with progressive firm where his experience will be of value. Practical background with country wide sales experience including introduction of new products. Until recently connected for many years with large marketing organization. For further details, communicate with Box 939, care *Soap*.

Ph.D.—with number of years practical background in sales demonstration work in both agricultural and household insecticides and their manufacture, desires new connection where his experience will be of value. For further details, communicate with Box No. 940, care *Soap*.

Sales Manager; thoroughly experienced in the janitor and Sanitary Supply field, at present employed, open for position with reliable company. Qualified to manage present sales organization or to build new sales division. Address Box No. 949, care *Soap*.

Soap Maker and Chemist with many years' experience making all kinds of laundry and toilet soaps, seeking change. Good references. Can take complete charge of manufacturing. Address Box No. 950, care *Soap*.

Soap Chemist—12 years experience (large concerns) in manufacture of soaps of all kinds, toilet, laundry, technical (reagent in ore flotation), glycerine recovery, laboratory (analytical, research) seeks position as chief chemist or superintendent. Address Box No. 944, care *Soap*.

Chief Chemist of specialty concern, desires new connection. Experienced in factory management, research, auto and household specialties. Own excellent formulae. Address Box No. 945, care *Soap*.

Superintendent—Man of experience in soapmaking and chemistry desires permanent position with reliable firm. All kinds of soap, powders, and cleansers—and recovery of glycerine. Address Box No. 961, care *Soap*.

3 NEW—Outstanding
SCIENTIFICALLY TESTED—
WATERPROOF • SELF-POLISHING

FLOOR WAXES

Now available for the JANITOR SUPPLY and JOBBING TRADE.

- Made right—for profitable business—can be had in bulk or in containers—under your own private brand

- Let us prove our statements regarding these three "best seller" grades. Write for free samples or for demonstration.

Empire Chemical Products Co.
12 LONGWORTH STREET NEWARK, N. J.

WE ALSO MANUFACTURE

Liquid Floor Soaps	Metal Polish	Gym-Finish
Rug Shampoo	Disinfectants	Paste Wax

READY for 1941
with CONSOLIDATED
Rebuilt Equipment

Serving Industry for 24 years

SELECTED SPECIALS

2—Pneumatic Scale Carton Packaging Units.
1—Sargent 54" x 72" single Chilling Roll.
2—Proctor & Schwartz Soap Chip Dryers, steel frame; 1 with single cooling roll.
1—Houchin Para Block Press, with 1⅛" x 3" die.
2—Jones Vertical Automatic Soap Presses.
1—Jones Horizontal Automatic Soap Press.
3—Houchin Plodders, 10", 8".
2—Automatic Soap Wrapping Machines.

Crutchers	Foot and Automatic Soap Presses	Filter Presses
Soap Kettles	Cutting Tables	Soap Frames
Powder Mixers	Pulverizers	Powder Fillers
Granite Mills	Soap Pumps	Labellers
Plodders	Soap Chippers	Tanks
Slabbers		Boilers

Send for New Illustrated Circular

CONSOLIDATED PRODUCTS CO., INC.
15-21 PARK ROW NEW YORK, N. Y.
BArclay 7-0600 Cable Address: Equipment
We buy your idle Machinery—Send us a list.

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We shall soon offer to our customers a genuine

ODORLESS DISINFECTANT

new fields will be opened for the disinfectant distributors

powerful against bacteria yet easily handled

safe to use in homes, dairies, hospitals, hotels, public buildings.

BAIRD & McGUIRE, INC.
HOLBROOK, MASS.

NO-ROMA NO-ROMA

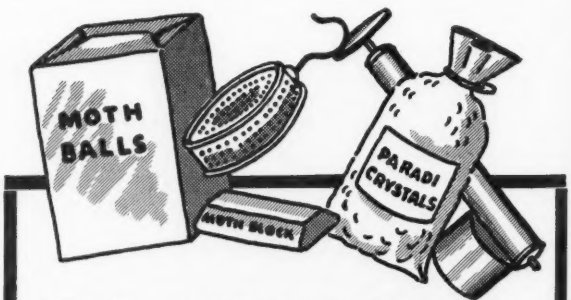
ROTENONE
and
DERRIS RESINS

Manufacturers of finished insecticides have come, over a period of years, to look to DERRIS, INC. as headquarters for rotenone and derris products of all types. We are specialists in this field and are prepared to supply specifically compounded products made up according to each customer's varying needs.

Timbo Powder — Derris Powder
of Finest Grind

DERRIS, Inc.

79 WALL STREET NEW YORK, N. Y.



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HOOKER

PARADI
(Reg. Trade Mark)

There is nothing better than pure paradichlorbenzene for killing moths, and their eggs and larvae. HOOKER Paradi is pure, unadulterated crystalline paradichlorbenzene. It is available in six convenient sizes, each of marked uniformity—clean, clear, bright and free-flowing. Rely on HOOKER for Paradi and many other chemicals for producers of Soaps and other sanitary chemical preparations. Inquiries and consultation are invited.

HOOKER ELECTROCHEMICAL COMPANY
NIAGARA FALLS, NEW YORK
NEW YORK CITY TACOMA, WASHINGTON

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1017

Chemical Specialties—Man with 25 years experience in Germany manufacturing polishes, floor waxes, leather dressings and allied materials for a well-known manufacturer, is now in the United States and desires to become associated with a firm in this line of business. Is thoroughly conversant with the export markets of these products as well as their formulation and manufacture. For further details, communicate with Box No. 947, care *Soap*.

Positions Open

Chemist—Experienced in Oil Soaps and Disinfectant. Write giving all details. Near Philadelphia. Address Box No. 954, care *Soap*.

Building Maintenance Supply Salesman—Have opening for reliable experienced salesman selling institutions and other large users. Exclusive territory. Commissions only. Address Box No. 946, care *Soap*.

Specialty Salesman or Representatives:—Coast to Coast—To sell established line of synthetic detergents and textile finishes—to jobbers, chemical manufacturers and textile mills. Exceptional commission basis. Protected territory. Only men with chemical experience and following need apply. Address Box No. 948, care *Soap*.

Miscellaneous

"**Group of capable,** aggressive, young men operating heavy chemical plant in Buffalo area need working capital. Can show substantial progress and opportunity for big earnings. Completed one government contract now bidding on others. Investment or loan with or without services to participate in attractive business opportunity. Principals only, no brokers." Address Box No. 951, care *Soap*.

Partner Wanted in small manufacturing business. Have machinery, trade mark and raw materials. Inventory $15,000. Must have money. Address Box No. 942, care *Soap*.

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 952, care *Soap*.

Agency Available—Agency for a nationally-known exterminating specialty in several states available to manufacturer or jobber in those territories whose men are calling on exterminators, janitor supply houses, large industrial plants, etc. Product has brand name widely advertised and over fifty years old. Territory on Eastern Seaboard only open. For further details, address Box No. 955, care *Soap*.

LIQUIDATION

from the Former

GEORGE E. MARSH PLANT, BOSTON, MASS.

1—Garrigue Glycerine Evaporator, capacity 100000 lbs. of lye per month (on 40 hour week)
150—Soap Frames, 1200 lbs.
4000—Soap Drying Racks
2—1200 lb. Crutchers
2—Proctor and Schwartz Soap Chip Dryers
2—Jacketed Kettles, 6′ x 6′
1—Jacketed Kettle, 8′6″ x 6′
7—Boiling Tanks, 2500 to 7500 gals.

PRICED FOR QUICK SALE. MUST BE REMOVED IMMEDIATELY.

—SPECIALS—

1—Jones Automatic Soap Press
6—H. A. Perfection Crutchers, 1200 lbs.
1—DAY JUMBO Horizontal Mixer, jacketed, 680 gals.
3—Day Jacketed Mixers or Crutchers, 500 gal.
3—Day and Dopp Mixers or Crutchers, 50 to 150 gals.
1—Package Machinery Co. Soap Wrapper
1—SHRIVER 30″ x 30″ STEAM JACKETED Plate and Frame Filter Press
10—Day, Gedge Gray Powder Mixers, 100 to 1500 lbs.
15—Shriver, Sperry Filter Press, 12″ to 36″ square
5—Blanchard, Jaybee, Williams Soap Powder Mills
1—Sharples Centrifuge, No. 6
1—GARRIGUE GLYCERINE EVAPORATOR, with 2 Salt Boxes, capacity approximately 3000 lbs. of 6% lye per hour
3—Rotex, Sturtevant, Tyler Screens
25—Pumps

Only a Partial Listing. Send for Latest Bulletin SFO

BRILL EQUIPMENT CORPORATION
183 VARICK STREET, N. Y. C.

"From a single item to a complete plant"

TETRA SODIUM PYRO PHOSPHATE

Crystalline-Anhydrous

Alkalies
Paradichlor benzene
Carbon Tetrachloride
Tri Sodium Phosphate

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We are in a favorable position to work with you on your requirements for these and other chemicals used in the manufacture of soaps, detergents and sanitary products. Why not check with us?

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JOHN A. CHEW, INC.
60 East 42nd Street New York
Phone: MUrray Hill 2-0993

COLORS

for

Toilet Soaps — Shampoos
Liquid Soaps — Lotions
Para Blocks — Hand Soaps
Shave Creams — Sweep Compounds
and other Chemical Specialties

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Does your product require a *certified color* under the new law? Let us advise you, and supply you with exactly the right color for the right purpose!

Interstate Color Co., Inc.
9 Beekman Street — New York

"Color it for greater sales appeal."

FOUGERE SAVON SUPREME

A FINE PERFUME OIL FOR SOAPS AND ALL SOAP PRODUCTS

FOUGERE SAVON SUPREME

We shall be pleased to forward a sample and full information

COMPAGNIE PARENTO, Inc.
Croton-on-Hudson — New York

"Good" Products at "Good" Prices

Manufactured by us under careful laboratory control.

DISINFECTANTS
- Pine Oil
- Coal Tar (Coef. 2 to 20)
- Cresol Comp. U.S.P.
- Cresylic

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- Liquid Soaps (up to 40%)
- Soap Bases
- Vegetable Oil Soaps (Paste and Liquid)
- Pine Scrub Soaps (Liquid and Jelly)
- Sassafrassy Scrub Soap
- Soft Soap, U.S.P.
- Auto Soap
- Saddle Soap

SPECIALTIES
- Self Polishing Wax (Up to 20% solids)
- Buffing Floor Waxes (Liquid and Paste)
- Liquid Metal Polish
- Liquid Furniture Polish
- Insecticide Sprays
- Weed Killer (Liquid)
- Fire Extinguishing Liquid
- Soda and Acid Recharges
- Drip Machine Fluid
- Toilet Bowl Cleaner
- Drain Pipe Cleaner
- Roach Powder
- Wax Base Cleaner
- Coal Tar Animal Dip
- Powdered Rosin

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Manufacturing Chemists—Since 1868
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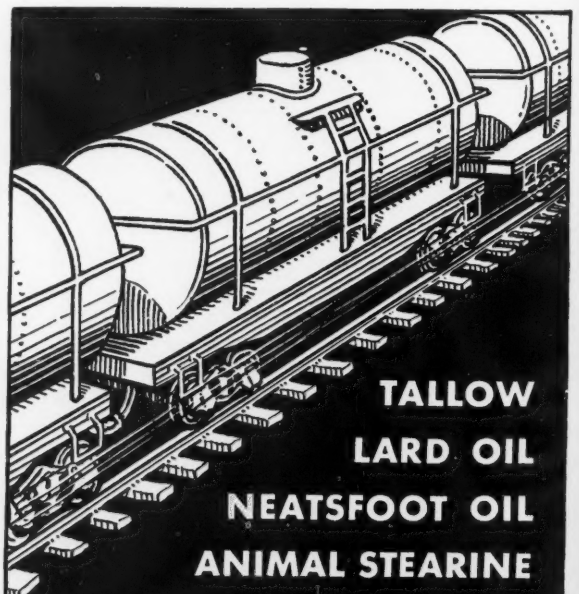

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LARD OIL
NEATSFOOT OIL
ANIMAL STEARINE
ACIDLESS TALLOW OIL

Prompt Delivery—Drums, Barrels, or Tank Cars.

INDEPENDENT MANUFACTURING CO.
Bridesburg P. O. — Philadelphia, Pa.

For Sale—Connecticut modern soap manufacturing plant. Has rendering permit. Address Box No. 943, care *Soap.*

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Rebuilt Guaranteed Machinery: Crutchers; Plodders; Jones Automatic Soap Press; Foot Presses; Proctor Soap Dryer; 9x24, 12x30, & 16x40 Three Roll Water Cooled Steel Mills; 4 Roll Stone Mill; Johnson Carton Sealers; Powder Fillers; 6 Knife Chipper; Mixers; Grinders; Boiling Kettles; Cutting Tables; Soap Frames; Filters & Filter Presses, etc. Send for Soap Bulletin No. 402. Stein Equipment Corp., 426 Broome St., New York City.

Canadian Company, manufacturing soaps and sanitary supplies, wishes to connect with American company, interested in manufacturing in Canada, for consumption in Canada and for export. Have facilities for manufacturing on large scale. Address Box No. 953, care *Soap.*

Wanted—dry powder Day or similar mixer capacity approximately five hundred pounds center dump; also small package soap box filler. Address Box No. 941, care *Soap.*

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Reg. U.S. Pat. Off.

The First and Only Pumice Originating in

AMERICA

Which satisfactorily supplants imported Pumice. Graded to your Specifications.

Write for samples and 12 page booklet of information

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PUMICE DIVISION
(Subsidiary Barnsdall Oil Co).
SENECA, MISSOURI, U. S. A.

The Chemistry of Laundry Materials

by D. N. JACKMAN

A discussion of materials used in the laundry, starting with water and going through alkalies, soaps, bleaches, starches, etc. The book contains valuable information on the chemistry of laundry materials, not stopping with the well-established products but discussing as well the newer detergents and assistants for scouring and washing, giving information on the so-called synthetic soaps and the other products whch now form the great number of newer detergents. 240 pages, $2.50 per copy.

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in these LIQUID FLOOR SOAPS

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High-grade, dependable cleaners for economy floor care—

PEXPINE LIQUID SCRUBBING SOAP

(Plain, Pine or Sassafras.) Made from a combination of pure vegetable oils, expressly for floors demanding a fine-quality, neutral soap. Its active soap content and non-alkaline nature assures a safe, effective cleaner. Leaves no soap film to cloud the surface.

PECK'S No. 100 SCRUB SOAP

(Plain, Pine or Sassafras.) A heavy-bodied moderately alkaline liquid floor soap made from pure vegetable oils. Used on composition, mastic, tile, terrazo, and cement floors. A fast action cleaner, dependable and economical in work—cuts grease and removes dirt solids.

SINCE 1918

THE MARK OF PREMIUM QUALITY SOAPS

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Manufacturers for Jobbers Exclusively

SOAP DIES and MOULDS

—for—
TOILET SOAPS
LAUNDRY SOAPS AND
BATH TABLET
STAMPING

For Foot and Power Presses

Established 1894

ANTHONY J. FRIES & SON CO.

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No Rubbing Wax
Liquid Rubbing Wax
Prepared Paste Wax
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White Emulsion Furniture Polish
Powdered Dance Wax
Bowling Alley Cleaner and Polish
Wax Soap Cleaner
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Buckingham and Private Label

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TAR ACID CREOSOTE OIL

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MIRVALE CHEMICAL CO., Ltd.
MIRFIELD — YORKS, ENG.

Calling WYOMING!

What is the matter with the Wyoming soap and sanitary chemical industry, our circulation manager wants to know. SOAP & SANITARY CHEMICALS has subscribers in 47 states, but Wyoming is still among the missing. Besides thoroughly covering the U. S. A. we do a fair job abroad. Subscribers numbering 552 in 56 foreign countries bear witness to the international influence of this publication. Annual subscription $3 domestic, $4 foreign.

RAW MATERIALS AND EQUIPMENT

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 139, for page numbers. *"Say you saw it in SOAP."*

ALKALIES

American Cyanamid & Chemical Corp.
John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Diamond Alkali Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

BULK AND PRIVATE BRAND PRODUCTS

Ampion Corporation (Soaps and Sanitary Chemicals)
Associated Chemists, Inc. (Insecticides)
Baird & McGuire, Inc. (Disinfectants)
Buckingham Wax Corp. (Wax Products)
Candy & Co. (Wax Products)
Chemical Mfg. & Dist. Co. (Soaps and Sanitary Chemicals)
Chemical Supply Co. (Disinfectants, etc.)
Davies-Young Soap Co. (Soaps and Floor Wax)
Empire Chemical Products Co. (Wax Products)
Federal Varnish Co. (Wax Products)
Fuld Bros. (Soaps and Sanitary Chemicals)
James Good, Inc. (Sanitary Chemicals)
Hysan Products Co. (Sanitary Chemicals)
Koppers Co. (Disinfectants)
Kranich Soap Co. (Potash Soaps)
Pecks Products Co. (Soaps and Sanitary Chemicals)
Philadelphia Quartz Co. (Detergents)
Reilly Tar & Chem. Co. (Floor Seals)
Sweeping Compound Mfrs. Co. (Sweeping Compound)
Twin City Shellac Co. (Wax Products)
Twi-Laq Chemical Co. (Wax Products)
Uncle Sam Chemical Co. (Sanitary Chemicals)
T. F. Washburn Co. (Wax Products)
White Tar Co. (Disinfectants, etc.)
Windsor Wax Co. (Wax Products)

CHEMICALS

American-British Chemical Supplies
American Cyanamid & Chemical Corp.
Chemical Mfg. & Dist. Co.
John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Diamond Alkali Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Reilly Tar & Chemical Corp.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
American Cyanamid & Chemical Corp.
Baird & McGuire, Inc.
Barrett Co.
Innis, Speiden & Co.
Koppers Co.
Mirvale Chemical Co.
Monsanto Chemical Co.
Pittsburgh Coal Carbonization Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Interstate Color Co.
Pylam Products Co.
Tamms Silica Co.

CONTAINERS AND CLOSURES

American Can Co. (Tin and Fibre Cans, Steel Pails)
Anchor-Hocking Glass Corp. (Closures and Bottles)
Continental Can Co. (Tin Cans)
Crown Can Co. (Tin Cans and Steel Pails)
National Can Co. (Tin Cans)
Williams Sealing Corp. (Closures)

DEODORIZING BLOCK HOLDERS

Fuld Bros.
Hysan Products Co.

INSECTICIDES, SYNTHETIC

American Cyanamid & Chemical Corp.
Associated Chemists, Inc.
Dodge & Olcott Co.
John Powell & Co.
Rohm & Haas Co.
U. S. Industrial Chem. Co.
Whitmire Research Corp.

MACHINERY

Anthony J. Fries (Soap Dies)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Karl Kiefer Machine Co. (Filling Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
J. M. Lehmann Co. (Soap Machinery)
Mixing Equipment Co. (Tanks, Mixers)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc.)
Stokes & Smith Co. (Packaging Machy.)

I & D Convention Registration

(*From Page 94*)

Company — Representative

American Can Co.—T. E. Alwyn, Louis A. Trevisan, E. K. Walsh.
Aromatic Products, Inc.—C. L. Weston.
Atlantic Refining Co.—F. I. L. Lawrence.
Auto Compressor Co.—Gilbert Wilkin.

Baird & McGuire, Inc.—G. M. Baird, J. Varley.
Baldwin Labs.—H. W. Baldwin, J. L. Sherrick.
Barroll, Henry & Co.—J. N. Davies.
Boyce, Thompson Inst.—Albert Hartzell.
Boyle, A. S. Co.—Dr. G. A. Bowden.
Breuer Elec. Mfg. Co.—Grant W. Breuer, J. W. Stokes.
Brilco Labs.—Irving J. Rifkin.
Buckeye Labs.—H. M. Epstein.

Canada Rex Spray Co.—W. H. Morrow.
Central Can Co.—Henry Frazin.
Chemical Supply Co.—Henry A. Nelson.
Clarkson Chemical Co.—J. H. Bender, A. H. Hollenback.
Clifton Chemical Co.—Dudley J. Bachrach, Alfred Zody.
Continental Can Co.—O. G. Jakob, L. J. La Cava, E. J. O'Connor.

Davies-Young Soap Co.—Dr. R. B. Trusler, R. H. Young.
Derris, Inc.—R. F. Joyce, O. M. Poole, R. Wotherspoon.
De Vilbiss Co.—Robert C. Rorden.
Dodge & Olcott Co.—Ralph W. Bush, Charles Homan, Wm. F. Kroneman, R. B. Stoddard.
Dolge, C. B. Co.—K. A. Dolge, Clarence L. Weirich.
Dow Chemical Co.—W. W. Allen, D. K. Ballman, Jack A. Dorland, Fred Fletcher, R. C. Harnden, Alex Leith, Jr., A. M. Partansky.
Dreyer, P. R., Inc.—Charles Fischbeck.
Du Pont, E. I. de Nemours—A. H. Goddin, S. J. Hill, F. W. Wolff, A. Pillet, George J. Tombak.

Federal Varnish Co.—M. J. Flanagan, John H. Lawson.
Frederick Dis. Co.—Fred A. Hoyt.
Fritzsche Bros.—Chas. C. Bryan.
Fuld Bros.—Melvin Fuld.

General Chemical Co.—T. A. Lancaster, G. L. Walker.
General Labs.—Wm. A. Hadfield.
Givaudan - Delawanna, Inc.—Dr. Arthur R. Cade, Dr. Wm. Gump, Robert A. Engel, R. M. Stevenson.
Gulf Oil Corp.—Wallace Thomas.
Gulf Research & Dev. Co.—A. C. Miller, Dr. W. A. Simanton.

Heller, B. & Co.—Preston B. Heller.
Hercules Powder Co.—G. F. Hogg, L. P. Killilea, George C. O'Brien, Frank Rapp, Friar Thompson, Jr.
Hess, Dr. and Clark, Inc.—D. E. Clark.
Hudson, H. D. Mfg. Co.—M. L. Harrison, V. A. Snell.
Huntington Labs.—J. L. Brenn.

Innis Speiden & Co.—P. L. Frost.

Jordan & Bros., W. E.—Jordan, R. J.

Kilgore Dev. Corp.—Dr. Jared H. Ford, Dr. L. B. Kilgore.
Koppers Co.—H. D. Cooper, R. C. Wickersham.
Kranich Soap Co.—Herbert Kranich.

Lambert Pharmacal Co.—Dr. G. F. Reddish.
Lederer Bacteriological Labs.—Dr. H. G. Lederer.
Lehn & Fink Prod. Corp.—Dr. E. G. Klarmann.
Lever Bros. Co.—C. N. Anderson.

McConnon & Co.—James McConnon.
McCormick & Co.—Dr. A. E. Badertscher, John N. Curlett, C. L. Fardwell, Lester W. Jones, C. P. McCormick.
McLaughlin-Gormley King—G. A. McLaughlin, Paul D. Torpin.
Magnus, Mabee & Reynard—M. Stanley Barker, J. B. Magnus, R. C. Ringgold.
Mac Nair-Dorland Co.—Stephen Dole, G. A. Dorland, W. E. Dorland, Ira P. Mac Nair.
Merck & Co.—Peter Dougan.
Midway Chemical Co.—L. D. Benedict.

National Can Corp.—Wm. R. Janney.
Newport Industries—W. H. McArdle.
Niagara Alkali Co.—James E. Ferris.

Opitz, John, Inc.—Chas. F. Opitz.
Owens-Illinois Can Co.—Hugh J. Kelleher, V. H. Neefus, J. W. Thayer, S. L. Rairdon, F. W. Rosenbauer.

Pease Laboratories—Dr. H. D. Pease.
Penick & Co., S. B.—Harold Noble, F. C. Ranch, B. A. La Forge, J. V. Smith.
Penn Salt Mfg. Co.—Stella M. Costigan.
Powell, John & Co.—Charles C. W. Campbell, George Hartz, W. J. Haude, David G. Hoyer, E. J. Palmer, John Powell, G. R. Rinke, Dr. Fred Snyder, Dr. A. Weed.
Prentiss, R. J. & Co.—H. R. King, John W. Purcell.

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Rex Research Corp.—Dr. Oscar F. Hedenburg, H. W. Moburg.
Robbins, Geo. B. Dis. Co.—W. J. Healy.
Rochester Germicide Co.—W. B. Eddy, J. A. Walsh.
Rohm & Haas Co.—W. H. Arendt, R. N. Lindabury, D. F. Murphy.

Selig Co.—Simon S. Selig.
Shell Oil Co.—R. L. Speer, W. S. Thornhill.
Sherwin-Williams Co.—Louis G. Gemmell, Earl Rothemich.
Sinclair Refining Co.—N. J. Gothard, A. G. Grady, F. O. Huckins, W. J. Andree, C. F. McGoughran.
Skinner & Sherman Inc.—Burton G. Philbrick.
Snell, Foster D. Inc.—C. S. Kimball.
Socony-Vacuum Oil Co.—L. A. Appley, Alan W. Morrison, C. F. Smith, A. C. Pabst.
Sonneborn, L. Sons—Edgar E. Brand, A. J. Kelley, Dr. Erich Meyer, F. J. Richter.
Stanco, Inc.—Franklin C. Nelson, N. A. Sankowsky, W. J. Zick.
Standard Oil (Ind.) Co.—C. R. Cleveland.
Standard Oil (Ohio) Co.—R. O. Cowin.

Tanglefoot Co.—Wm. J. Wagner.

U. S. Industrial Chem. Co.—Walter R. Clark, A. L. Fuller, Warren E. Johnson, P. W. Parsons, Marvin J. Rolstad.
U. S. Rubber Co.—W. P. ter Horst.
U. S. Sanitary Spec. Corp.—Geo. L. Simmonds

Van Ameringen-Haebler — Philip E. Haebler.
Vanderbilt, R. T. Co.—William K. Feustel.

White Tar Co. of N. J.—K. R. Burke, H. W. Hamilton.
West Dis. Co.—Dr. William Dreyfus, John A. Marcuse.
White, Robert C., Co.—Dr. Robert C. White, Robert C. White, Jr.
Whitmire Research Corp. — H. E. Whitmire.
Wilson & Bennett Mfg. Co.—H. J. Rourke, E. T. Statler, J. F. Nelson.

Zonite Products Corp.—C. E. Entemann, Jr.

List of Guests

George H. Brohm — State of New York, Asst. Director of Purchase.
John C. Bubb—U. S. D. A.
William O. Buettner—National Pest Control Assn.
Dr. F. L. Campbell—Ohio State University.
C. C. Concannon—Dept. of Commerce.
Dr. F. J. Cullen—Proprietary Assn.
Dr. Henry C. Fuller—Technical Consultant, NAIDM.
Roy Hansberry—Cornell University.
Dr. Lon A. Hawkins—U. S. D. A.
Esler Johnson — Pacific Insecticide Inst.
Dr. F. B. La Forge—U. S. Bur. of Ent. & Plant Quarantine.
Dr. C. C. McDonnell—Agrl. Marketing Service, U. S. D. A.
Dr. E. R. McGovran—U. S. D. A.
G. A. Peart—Dept. of Agriculture, Dom. of Canada.
C. R. Plumb—Dept. Agriculture and Markets, N. Y. State.
F. W. Reynolds — Natl. Bureau of Standards.
Dr. R. C. Roark—U. S. D. A.
Dr. Ed. M. Searls — University of Wisconsin.
Alden E. Stilson—Morse-Boulger Destructor Co.
Dr. E. L. Newcomb—Nat'l Wholesale Druggist Assn.
Max Rosenthal—"Pests."
Ray Schlotterer—Federal Wholesale Druggists Assn.

NOTE: This is a classified list of the companies whichadvertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 139, for page numbers. *"Say you saw it in SOAP."*

MACHINERY, USED

Consolidated Products Co.
Brill Equipment Corp.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Standard Mfg. Co. (Wax Applicator and Mops)
Anchor-Hocking Glass Corp. (Metal Caps)
Barnsdall Tripoli Co. (Pumice and Tripoli)
Crosby Naval Stores, Inc. (Pine Oil and Rosin)
Dow Chemical Co. (Germicides, Agricultural Insecticides, Fumigants)
Filtrol Corp. (Purifying and Decolorizing Clay)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants)
Koppers Company (Coal, Coke, Roofing Materials)
Newport Industries, Inc. (Pine Oil and Rosin)
Pennsylvania Refining Co. (White Oils)
Pylam Products Co. (Lathering Agent)
Reilly Tar & Chem. Co. (Preservatives)
Steryl Prods. Corp (Toilet Deodorizer)
Victoria Paper Mills Co. (Toilet Tissues)

OILS, FATS, AND FATTY ACIDS

Eastern Industries
Emery Industries, Inc.
Independent Manufacturing Co.
Industrial Chemical Sales Div.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Welch, Holme & Clark Co.

PARADICHLORBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING MATERIALS

American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. Du Pont de Nemours & Co.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Rifa—New York, Inc.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Albert Verley, Inc.

PETROLEUM PRODUCTS

Deodorized Insecticide Base, White Oils, Petrolatum, Paraffine Oils, Residues, etc.)

Atlantic Refining Co.
Pennsylvania Refining Co.
Shell Oil Co.
L. Sonneborn Sons, Inc.

PHOSPHATES

Trisodium, Sodium Pyrophosphate, etc.)

American Cyanamid & Chemical Corp.
John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

PYRETHRUM AND ROTENONE PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products)

Associated Chemists, Inc.
Derris, Inc.
Dodge & Olcott Co.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.

SILICATES

E. I. du Pont de Nemours & Co.
General Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Ampion Corp.
Bobrick Mfg. Co.
Chemical Mnfg. & Dist. Co. (Dishwashing Comps.)
Fuld Bros.
Presto Mfg. Co.

SPRAYERS

Breuer Electric Mfg. Co. (Electric)
Fumeral Co. (Pressure Sprayers, Steam, Air, CO_2 gas)
H. D. Hudson Mfg. Co.

WAXES AND GUMS

Carnauba, Shellac, Candelilla, etc.)

American Cyanamid & Chem. Corp.
Innis, Speiden & Co.
The Mac Lac Co. (Shellac)
Mantrose Corp. (Shellac)
Twin City Shellac Co. (Shellac)

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Apr. 27, 1940. Serial No. 431,315. Published Sept. 3, 1940. Class 4.

382,795. Germicide. Fred R. Wallich, Wallich Laboratories, Los Angeles. Filed May 29, 1940. Serial No. 432,496. Published Sept. 3, 1940. Class 6.

382,825. Insecticides. A. S. Boyle Co., Jersey City, N. J. Filed June 20, 1940. Serial No. 433,213. Published Sept. 3, 1940. Class 6.

382,830. Floor cleaner. Rodger F. Becker, Fibre-Tex Mfg. Co., Kalamazoo, Mich. Filed June 20, 1940. Serial No. 433,269. Published Sept. 3, 1940. Class 4.

382,864. Cleaning compound. Harvey E. Brown, Rollins & Rice, Aurora, Ill. Filed July 5, 1940. Serial No. 433,698. Published Sept. 3, 1940. Class 4.

382,886. Paste shampoo. Davies-Young Soap Co., Dayton. Filed July 20, 1940. Serial No. 434,174. Published Sept. 3, 1940. Class 6.

382,965. Bubble bath preparation Charm Products, Inc., Los Angeles. Filed Apr. 19, 1940. Serial No. 430,945. Published Sept. 10, 1940. Class 6.

383,003. Cleaning solvents. E. I. du Pont de Nemours & Co., Wilmington, Del. Filed June 13, 1940. Serial No. 433,078. Published Sept. 10, 1940. Class 4.

383,014. Shoe polish. Best & Co., New York. Filed June 20, 1940. Serial No. 433,209. Published Sept. 10, 1940. Class 4.

383,031. Insecticides. Andrew Wilson, Inc., Springfield, N. J. Filed July 1, 1940. Serial No. 433,590. Published Sept. 10, 1940. Class 6.

383,041. Parasiticides. California Spray-Chemical Corp., Richmond, Cal. Filed July 11, 1940. Serial No. 433,849. Published Sept. 10, 1940. Class 6.

383,047. Toilet soap. Los Angeles Soap Co., White King Soap Co., Los Angeles. Filed July 15, 1940. Serial No. 433,976. Published Sept. 10, 1940. Class 4.

383,053. Floor wax. United Buyers Corp., Chicago. Filed July 15, 1940. Serial No. 434,003. Published Sept. 10, 1940. Class 16.

383,071. Insecticides. General Chemical Co., New York. Filed Aug. 1, 1940. Serial No. 434,561. Published Sept. 10, 1940. Class 6.

383,115. Cleaner. Leonard J. Kurtz, Cleveland. Filed July 12, 1939. Serial No. 421,486. Published Sept. 17, 1940. Class 4.

383,123. Saddle Soap. R. M. Hollingshead Corp., Camden, N. J. Filed Nov. 27, 1939. Serial No. 425,998. Published August 27, 1940. Class 4.

383,155. Mouthwash. Wm. S. Merrell Co., Cincinnati. Filed May 24, 1940. Serial No. 432,309. Published Sept. 17, 1940. Class 6.

383,321. Detergent. Edgar A. Murray Co., Detroit. Filed March 26, 1940. Serial No. 429,994. Published Sept. 24, 1940. Class 4.

383,228. Disinfectant. Merck & Co., Rahway, N. J. Filed July 20, 1940. Serial No. 424,182. Published Sept. 3, 1940. Class 6.

383,258. Insecticide. Corneli Seed Co., St. Louis. Filed Aug. 7, 1940. Serial No. 434,741. Published Sept. 17, 1940. Class 6.

383,298. Insecticide. Miller Chemical & Fertilizer Corp., Baltimore. Filed May 20, 1939. Serial No. 419,624. Published Sept. 24, 1940. Class 6.

383,337. Cleaning preparation. John P. Cadden, Fabric Products Co., Baltimore. Filed June 6, 1940. Serial No. 432,712. Published Sept. 24, 1940. Class 4.

383,356. Cleaner. Glitter Products, Inc., Detroit. Filed June 28, 1940. Serial No. 433,488. Published Sept. 24, 1940. Class 16.

383,364. Soap. Fred P. Robin, Phila. Filed July 5, 1940. Serial No. 433,724. Published Sept. 24, 1940. Class 4.

383,367. Polish. G. E. Specialty Co., New York. Filed July 9, 1940. Serial No. 433,779. Published Sept. 24, 1940. Class 16.

383,385. Soap. Harriet Hubbard Ayer, Inc., New York. Filed July 25, 1940. Serial No. 434,306. Published Sept. 24, 1940. Class 4.

383,460. Soap. Joseph Metrie, XO Co., Milwaukee. Filed June 6, 1940. Serial No. 432,726. Published July 30, 1940. Class 4.

383,467. Cleaner. Albert Isserson, Nu-Life Products Co., Cleveland. Filed June 20, 1940. Serial No. 433,237. Published Oct. 1, 1940. Class 4.

383,631. Washing Fluid. Cyrus E. Manierre, Solvent Products Co., New York. Filed July 17, 1940. Serial No. 434,077. Published Oct. 8, 1940. Class 4.

383,650. Soap. Superior Soap Corp., Brooklyn. Filed Aug. 10, 1940. Serial No. 434,888. Published Oct. 8, 1940. Class 4.

383,707. Rancidity preventative for soap. Monsanto Chemical Co., St. Louis. Filed July 23, 1938. Serial No. 408,851. Published Aug. 30, 1938. Class 6.

383,855. Disinfectant. Fort-A-Cide Sales Co., Chicago. Filed Aug. 3, 1940. Serial No. 434,637. Published Oct. 15, 1940. Class 6.

383,867. Soap. Campana Corp., Batavia, Ill. Filed Aug. 8, 1940. Serial No. 434,775. Published Oct. 15, 1940. Class 4.

383,880. Parasiticides. Atlas Powder Co., Wilmington, Del. Filed Aug. 14, 1940. Serial No. 434,962. Published Oct. 1, 1940. Class 6.

383,900. Insecticides. Tovrea Packing Co., Phoenix Ariz. Filed Aug. 23, 1940. Serial No. 435,326. Published Oct. 1, 1940. Class 6.

383,903. Shampoo. Paul Pierro, Paul Pierro & Co., New York. Filed Aug. 27, 1940. Serial No. 435,436. Published Oct. 8, 1940. Class 6.

383,907. Deodorant. Carter Products, Inc., New York. Filed Sept. 5, 1940. Serial No. 436,677. Published Oct. 15, 1940. Class 6.

383,911. Insecticide. General Chemical Co., New York. Filed Sept. 7, 1940. Serial No. 435,756. Published Oct. 15, 1940. Class 6.

383,711. Sticking agent for insecticides. Rohm & Haas Co., Phila. Filed Dec. 6, 1938. Serial No. 413,523. Published March 7, 1939. Class 6.

383,714. Complexion Soaps. Lucky Heart Laboratories, Inc., Memphis. Filed Apr. 24, 1939. Serial No. 418,644. Published Oct. 15, 1940.

PROFESSIONAL DIRECTORY

SKINNER & SHERMAN, INC.
246 Stuart Street Boston, Mass.
Bacteriologists and Chemists
Disinfectants tested for Phenol Coefficient. Toxicity Index determined by chick embryo method of Salle. Antiseptics tested by agar cup plate and other standard methods.
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strength of Insecticides
by PEET GRADY METHOD
PYRETHRINS in PYRETHRUM FLOWERS
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Our staff of chemists, engineers and bacteriologists with laboratories for analysis, research, physical testing and bacteriology are prepared to render you
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DRUGS — ESSENTIAL OILS — SOAP
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Refer To Your 1940
BLUE BOOK
for F.D.A. Method for Testing of Disinfectants and Antiseptics.
Official N.A.I.D.M. Method for Testing and Grading of Insecticides.
Free with a $3.00 subscription to SOAP.
$4.00 Foreign
MAC NAIR-DORLAND CO.
Publishers
254 W. 31st Street New York, N. Y.

Announcement . . .

PRICES for the 1940 Official Test Insecticide have been advanced effective immediately in accordance with a unanimous action of the Board of Governors. The 1940 O.T.I. is now priced at $5.00 per dozen bottles. To all non-members of the N.A.I.D.M., there is added to this price a service charge of $1.00 per dozen.

This advance in price has been occasioned by an attempt to reduce the monetary loss to the N.A.I.D.M. resulting from the manufacture, packaging and distribution of the O.T.I.

▼

National Association of

Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street New York

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Lehn & Fink, Inc., Bloomfield, N. J.
WALLACE THOMAS . . . . . Gulf Refining Co., Pittsburgh
R. H. YOUNG . . . . Davies-Young Soap Co., Dayton, O.

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Every effort is made to keep this index free of errors, but no responsibility is assumed for any omission.

"If he throws you out again, Cuthbert, remind me to speak to the boss about advertising."

. . . help for salesmen

A SUGGESTION for 1941 . . . give your salesmen a lift . . . help them to get in to see the right men at the right places . . . to avoid that terse turn-down, "not interested" . . . make your firm and your products better known IN ADVANCE of salesmen's calls . . . and KEEP THEM well known through the use of regular advertising in representative trade publications.

If, for example, it's in the field of soap products, cleansers, detergents, insecticides, disinfectants, and other sanitary products and chemical specialties where you want to expand your business in 1941, we suggest that you look into the merits of regular advertising in

SOAP *and Sanitary Chemicals*
254 WEST 31st STREET NEW YORK

Member Audit Bureau of Circulations

Tale Ends

SAID the head of a well-known perfuming materials firm recently in talking over the prospects for 1941: "We have been prepared for inflation for over two years. We hope it never comes,—but what other answer can there be to the present rate of government spending?"

* * *

And said another, this time one of the more successful small soapers, talking along the same line: "My oil tanks are full and have been full for over a year, and you can bet your bottom dollar that they will be kept full during 1941. Certainly, it cost me money last year,—but they are still going to be kept full."

* * *

Once upon a time there was in the legal vocabulary of the world a phrase, "caveat emptor," which being translated means "let the buyer beware." But with the Wheeler-Lea Act and the sprouting activities of the Federal Trade Commission, we understand that this phrase has been dropped from American law dictionaries to be replaced by the Latin equivalent of "let the seller beware," —whatever that may be.

* * *

The 1941 *Blue Book* will be published about March 1. Your subscription to *Soap & Sanitary Chemicals* entered or renewed *now* will automatically entitle you to a free copy of the *Blue Book* as soon as it is off the press.

* * *

From the University of Tennessee, we hear that "Pyrethrin is the death dealer in a half-dozen household and field insecticides which are widely advertised. Three-quarters of a million *tons* of the chemical have been imported into the United States annually . . ." Wow,—quite some pyrethrins! It would mean about 150 *billion pounds* of pyrethrum. Quite a little pyrethrum. Actually, American imports total at the top 10,000 tons of flowers, averaging less than one per cent pyrethrins.

"20% more production" than he thought possible

January 13, 1939

Mr. A. R. McQuillin
Houchin Machinery Co., Inc.
6th & Van Winkle Aves.
Hawthorne, N. J.

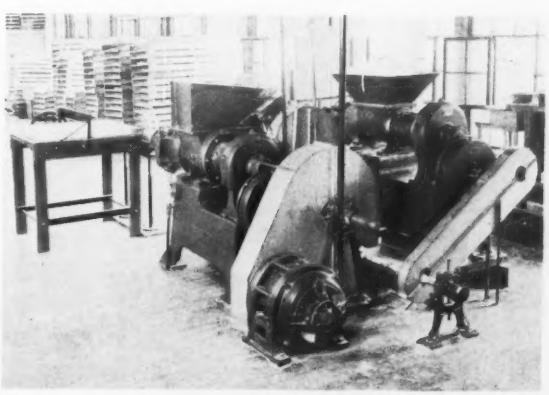
Dear Mr. McQuillin:

We thought you would be interested to know that we have been operating a Houchin Combination Machine consisting of an 8" plodder, a 3 roll mill, and a 10" double head plodder since April 1938.

The machine has been in daily use and has proved itself to be most dependable. In fact, we have found the machine to be satisfactory in every respect having accomplished even more than the maker claimed.

Generally speaking, taking into consideration an average of our daily runs we would say that the machine has turned out about twenty percent more production than we had anticipated would be possible.

This combination unit takes up very little floor space and is very economical to run due to the fact that the entire assembly is powered by one 20 H.P. motor.



—Unit No. 1—(referred to in letter above).
—8" Preliminary Plodder
—3 Roll Mill*
—10" Double Head Plodder
—Roller Board
—Cutting Table
—Capacity 400 to 600 lbs. per hour. (twice thru).
—Larger Units, Capacity 800 lbs. or more per hour (Once thru).

*Also supplied, when desired, with chilled iron, water cooled rolls.

HOUCHIN MACHINERY COMPANY, Inc.
HAWTHORNE Fifth and Van Winkle Aves. **NEW JERSEY**

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Santochlor is a white product of high purity, made in accordance with modern manufacturing methods that are closely supervised. It is recommended for any use where a high grade, uniform paradichlorobenzene is required.

Santochlor crystals are free-flowing, and vaporization is complete, leaving no residue. Standard sizes are available which meet all of the requirements of the trade.

For samples and further information, inquire: MONSANTO CHEMICAL COMPANY, St. Louis, U. S. A. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Montreal, London.

Monsanto Products for Manufacture of Sanitary Products Include: Santochlor, Methyl Salicylate U. S. P., Phenol U. S. P., Nitre Cake, Cresylic Acid, Trisodium Phosphate, Wetting Agents.

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